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RAIL-ROAD NEWS.

Prevention of Accidents on Railroads.

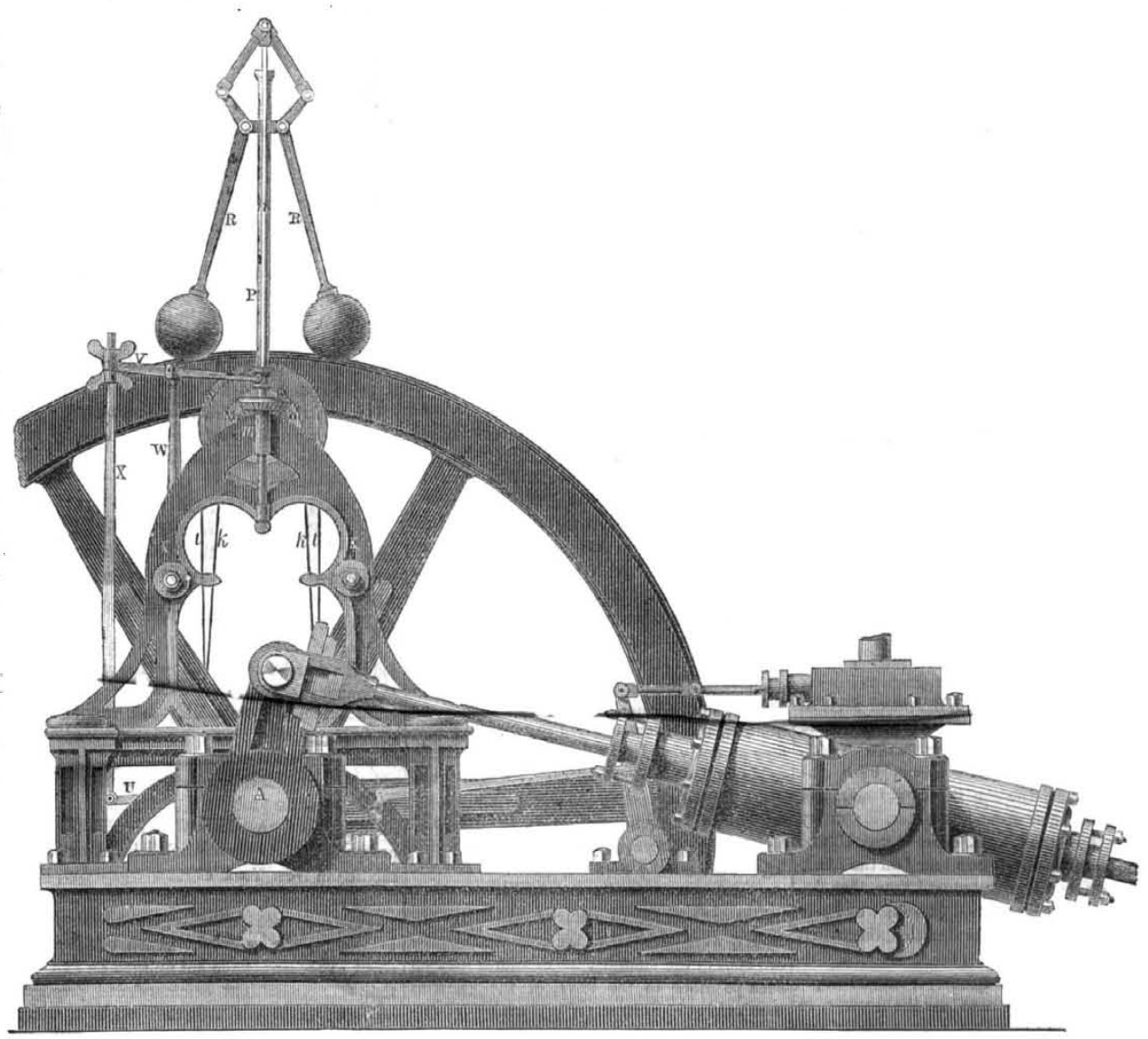
On Saturday evening, the 25th inst., the passenger train from New Haven, and the freight train from New York, came into terrible collision about two miles above Williams' Bridge, on the New York and New Haven Railroad. One fireman and a brakeman were killed instantly, and five or six persons were severely wounded. The passenger train was behind time, and running at the rate of 30 miles per hour; the freight train was running at the rate of 16 miles per hour. The engines, tenders, and some cars, were smashed to pieces. The scene was a terrible one. The freight train should have waited at Williams' Bridge, but from what we can learn, there was a misunderstanding, either on the part of the engineer, signal-man, or the superintendant of the road. The conductor of the freight train says he believed the New Haven train had passed." The order of arrangement appears to us to have been too loose and indefinite; there was but a single track where the collision took place, and that had a narrow curve, which prevented the approaching trains from seeing one another in time to reverse the engines. The engineer of the freight train is greatly to blame for not stopping, for the flag-man swung his red light, and he should have stopped to inquire the reason of such a signal; but no, on he went, from the double to the single track and in three minutes afterward the terrible collision took place. No excuse can palliate this reckless conduct.

There should be no single tracks allowed, without a railroad telegraph to signal from one station to another. By this means no collisions would take place, for, in a minute, the news whether a down train had left the next station, and vice versa, could be communicated, and thus the detentions of one train could soon be known along the line, and also the place where the other one was, so as to prevent two trains running, like madmen, one against another. Orders could also be communicated from the superintendant to direct the movements of trains along the line. We have advocated a system of railroad telegraphs before; and we now call the attention of our railroad companies to the subject again. The cost of the telegraph would be far less than the expense of collisions. The mere wreck of the engines by the above collision has been estimated at $10,000, but the company will yet have to pay, and justly too, a large sum to the relatives of the killed, and those of the wounded. Double tracks and railroad telegraphs would at least prevent collisions.

City Railroad.

The Managers of the Sixth Avenue Railroad Company, in this city, have reported to the Common Council, that they are ready to commence the work and prosecute it with all reasonable dispatch. Well, we hope it will be prosecuted with dispatch, and as it will no doubt be a profitable road, we think it will soon be under headway. City Railroads are much needed in this village of 600,000 people.

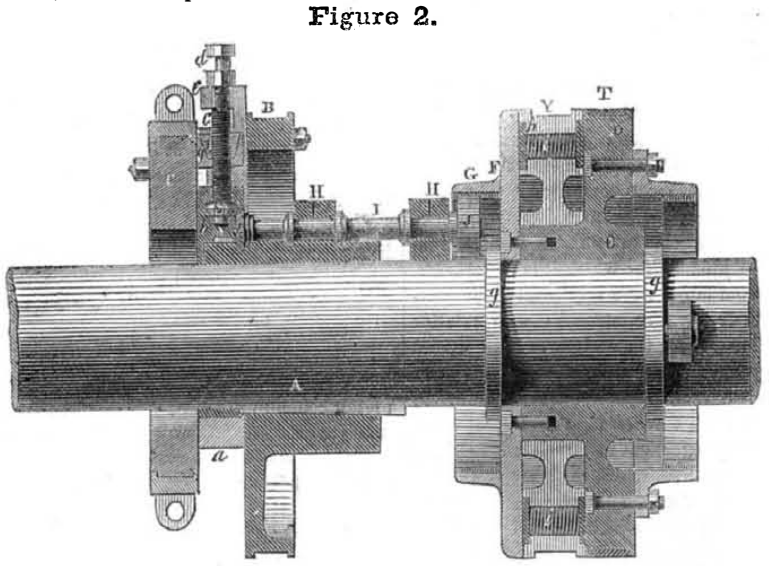
STEAM ENGINE REGULATOR.---Fig. 1.



The accompanying engravings represent the improvements invented by Mr. H. A. Luttgens, of this city, for regulating the speed of engines, for which a patent was granted on the first of last month, (Oct., 1851).

Fig. 1 is a side elevation, and fig. 2 is a section of a front elevation. The same letters refer to like parts. To render the description more easily understood, we will first describe its nature. This consists in a moveable cut-off eccentric, the stroke of which is controlled by mechanism which depends for its action upon a pulley brake wheel, and spur wheel, hung upon the same shaft; the brake wheel and spur wheel are secured together and fitted loosely on the shaft, so as to turn upon it, but are confined lengthwise; the pulley is fitted outside the boss of the brake wheel or spur wheel, and is made to drive the brake and the spur wheel by friction, itself being driven by a band in the same direction with, but at greater speed than the shaft. The brake wheel is encircled by a friction band which is controlled by the governor so as to produce

Figure 2.



a greater or less amount of friction upon it. The mechanism which actuates the eccentric consists of a small spindle hung parallel to the main shaft in bearings secured upon its periphery; on one end of the spindle is a pinion, which gears in the spur wheel, and on the other end is a bevel wheel gearing into a like one made upon *a screw*, which screw, by being turned, alters the throw of the eccentric. The apparatus is so adjusted, that when the engine is working at its proper speed, the governor shall produce just so much friction of the brake strap on the brake wheel, as will balance the friction of the pulley on the spur wheel, and cause it (the spur wheel) to be driven at the same speed as the shaft, and make the eccentric stationary, but at the same time, as soon as the speed increases or decreases, it cause the governor to exert a greater or less amount of friction, on the brake wheel than the pulley exerts upon the toothed wheel, and thus cause the spur wheel to revolve at a greater or less speed than the shaft, when in either case it operates on the pinion and gives rotation to the small spindle and bevel wheels operating on the screw of the eccentric, to alter its throw, to cut off the steam earlier or later as may be required.

A is the crank shaft of the engine; B is a pulley keyed on it to drive the governor, &c.; it has got a pair of dove-tailed guides, *a*, secured firmly on it. C is the cut off eccentric with dovetailed, two slides, *b*, (one shown) secured to its back, and fitting between *a a*. It has an opening in it, for the shaft to pass through, of such a form as to allow its degree of eccentricity to be altered; *c* is the screw for altering the throw of the eccentric, one end rests in a threaded centre on the pulley, B, and the other end against the point of a centre screw, *d*, which fits in a nut, *e*, secured to the pulley; it is held perpendicular to the axis of the shaft and radial to it, and is prevented from moving end-wise. It carries a bevel pinion, S, passing through a nut, *t*, in a small box, *q*, secured to the eccentric. If the screw, *c*, is turned round, it being placed edgewise, it will cause the nut, *t*, to move along it and change the position of the eccentric, C.

D is the brake wheel; E is its deep boss or hub fitted on the shaft; F is a metal disc secured by bolts to the brakewheel. G is a ring which is toothed inside and secured to the said disc.

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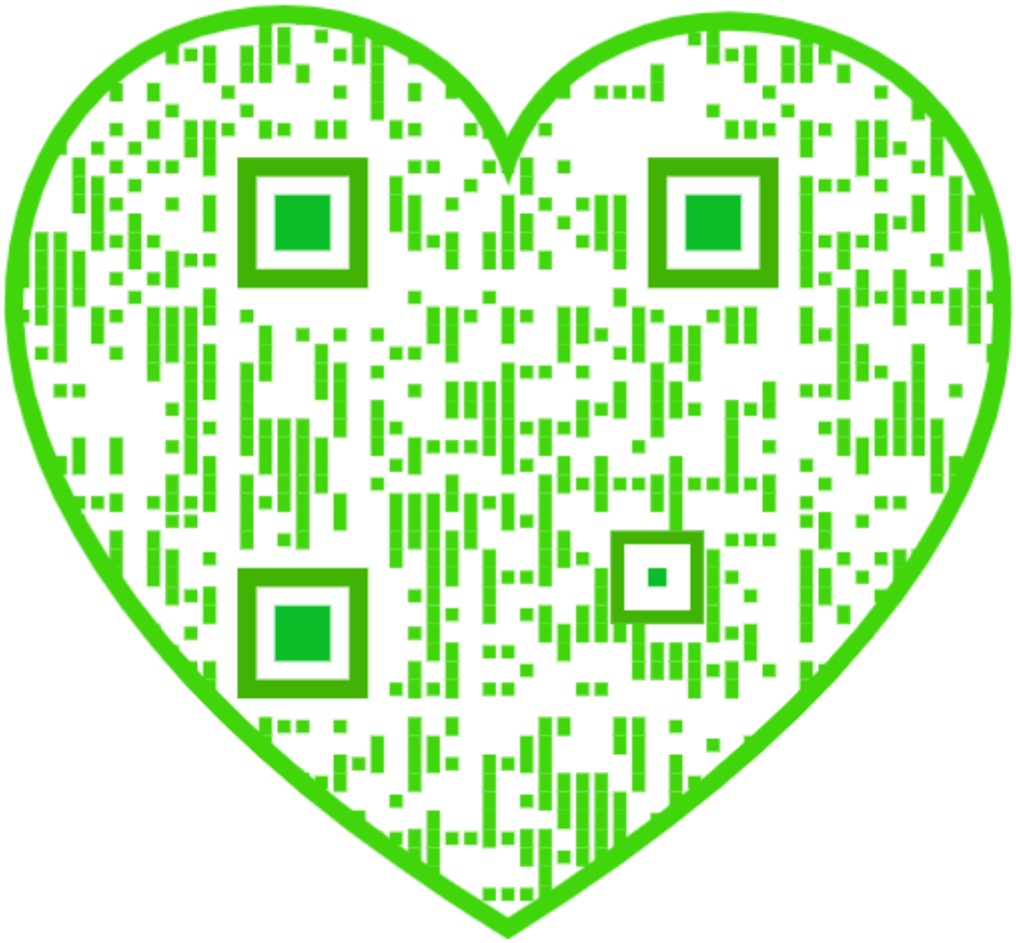

The brakewheel and spur wheel are secured from moving edgewise by rings, *g g*. Y is the pulley which gives motion to the spur wheel or toothed ring, G. It is is of the same diameter as B, and is fitted on E. This hub has a recess fitted in its face to recive a ring, *h*, next the disc, F. It has a number of spiral springs, *i i*, attached to its back, to force it out against the disc. A A are a pair of small bearing boxes—the one is on the shaft, and the other on the pulley, B; these boxes carry the small spindle, I, which has a pinion, J, gearing into G at one end, and the bevel pinion, *j* gears into the one S, on the adjusting screw, *c*, of the eccentric at the other end. K K, fig. 1 are standards on the engine framing. M is a pulley on a small transverse shaft; it receives motion by a band, *k*, from pulley, B, on the main shaft. N is another pulley of greater diameter which communicates motion by a band, *l*, to the pulley, Y It also carries a bevel wheel, O, for driving the governor. P is the governor main spindle hung in bearings, *m*, in the standards. It carries a bevel wheel, Q, driven by the one, O. R R are the weighted arms, and *n n* (one shown), small rods through which they operate on the slide socket at the inner end of V, raising it as their speed increases and *vice versa*. The governor is driven at the same speed as the crank shaft, the difference between the diameters of the pulleys, B M, being compensated, by the difference between the bevel wheels. O Q. On the shaft round the brake wheel, D is encircled a friction strap (not shown in fig. 1) made of light spring steel, having a tendency to free itself. Its two ends are secured by pins, one of which forms the axis of the lever, T, which is connected by a rod, X, to the lever, U, whose fulcrum is the standard, W. The forked end of V embraces the sliding socket, P, of the governor, the slightest motion of which, up or down, causes the lever, V, to act on the brake lever, U, which tightens or loosens the steel strap on the wheel, D, around shaft A, and causing the said spring brake to produce more or less friction on the brake wheel, D. The pulley, Y, being driven by a larger pulley than the one B, moves faster, and must turn upon or around the boss, E; or by the ring, *h*, on the disc, F, cause it and G, and the brake wheel, D, to turn round on the shaft. When less friction is produced than that described, on the brake wheel (the shaft and pulleys revolving in the same direction) the pulley, Y, drives G in advance of the crank shaft, driving the pinion, J, the spindle, I, and bevel pinion, *j*, in such a way as to turn the screw, *c*, in a direction to decrease the eccentricity and throw off the eccentric; but when more friction is produced on the break wheel than by the ring, *h*, on F, the wheel, G, is retarded, and the shaft moves in advance of it. The pinion, J, spindle, I, and bevel wheel, *j*, then revolve in the opposite direction to that last described, causing the screw, *c*, to increase the throw of the eccentric which is connected to the cut-off—the greater the throw of the eccentric, the quicker is the steam cut-off. The eccentric is set to cut off the steam at the ordinary pressure for the work of the engine, and the break wheel and its gearing revolving at the same velocity as the crank shaft, therefore the spindle, I, and the screw, *c*, and consequently the eccentric, remain stationary, but as soon as the steam increases, or work is taken off the engine and its velocity increased, the arms, R R, of the governor move laterally, the forks of lever, V, rises with P, the rod, X, is depressed, and the lever, U, acts upon the friction strap tightening it, and increasing the resistance on the brake wheel, D, thereby retarding the motion of G, and giving motion to pinion, J. and spindle, I, so as to increase the throw of the eccentric; when the steam falls, or the work is increased on the engine, and the speed is decreased, the force of the governor lowers the inner end of the lever, V, raising up the lever, U, taking off the friction of the brake by loosing the steel strap, thereby taking off the friction, and allowing the spur wheel to move on in advance of the crank shaft to give motion to the spindle, I, so as to lessen the throw of the eccentric. The throw of the eccentric, and the cut-off are therefore governed by the pressure of the steam and the amount of work upon the engine, thus the engine is made to work with a very uniform motion—more so than can be obtained by common modes under varying pressures, when the engine is governed by the throttle valve.

The apparatus is capable of considerable modification without any alteration of its principles. The claim will be found in our list of the 1st of last month (No. 6).

More information may be obtained by letter addressed to the patentee, 161 William street this city.

Foreign Correspondence.

London, Oct. 16, 1851.

The Great Exhibition is closed, and that wonderful fabric, the Crystal Palace—that creation of Paxton, which was the admiration of all who saw it, and the greatest wonder of all—is no more. The hammer, the chisel, the wrench, and the driver are now busy in its demolition, and the place which lately embraced the works of art of all nations, and whose passages were sometimes thronged with the living tide of an hundred thousand souls, will soon exist in imagination only, for next Spring the grass will be growing where stood the "Mountain of Light," and the leaves of the trees will be rustling, in another month, where rustled the satins of Lyons and the shawls of Cashmere.

In looking back upon the scene, I cannot but consider the Great Exhibition as the most wonderful creation of genius ever presented to the world. It was well to remove the Crystal Palace: it will be something to speak about to future generations.

The Exhibition closed yesterday. A spacious platform was erected on the site of the great Crystal Fountain, which once sent its joyful jets dancing upwards, but which was now hushed in sleep forever. The platform was covered with scarlet, and had seats for the Royal Commissioners. In the middle was a splendid ivory throne, a present from the Oriental Rajah of Travancore. The area of the transept had been reserved for the Foreign and Local Commissioners, the Jurors, the lady exhibitors, and others entitled to a special privilege of entry, and seats for them were disposed in such a manner round the platform that they had the utmost facilities which the construction of the building afforded for seeing and hearing the proceedings. Exhibitors, members of the Society of Arts, chairmen, secretaries, and members of local committees, and all others not entitled to enter at the south entrance, were admitted at the eastern and western ends of the building, and of course took up such positions in the nave, or the galleries overlooking it, as appeared to them best adapted for securing a good view of the ceremony. To help them, the various flags and banners with which the interior was ornamented, were all struck. Precisely at 12 o'clock the Royal Commission, headed by the Executive Committee, moved in a species of procession from their apartments to the platform. They were accompanied by the Bishop of London in his robes, and on their appearance the immense assembly rose and welcomed them with loud cheers, while the choir performed the first verse of the National Anthem.

Viscount Canning, on behalf of the Juries, read a report of their proceedings; it is of considerable length, giving the details of the Constitution of the Juries, the plan of operations adopted, &c. Each of the 34 Juries consisted of an equal number of British subjects and of foreigners. The British jurors were selected by her Majesty's Commissioners from lists furnished by the local committees of various towns, each town being invited to recommend persons of skill and information in the manufacture or produce for which it is remarkable. The foreign jurors were appointed by authorities in their own countries, in such relative proportion among themselves as was agreed upon by the foreign commissioners sent here to represent their respective Governments.

Prince Albert received the Reports, and made a very excellent and well-prepared reply, at the close of which the second verse of the National Anthem was performed with great energy; after which the Bishop of London offered up an appropriate prayer of thanksgiving. The Hallelujah chorus formed an effective termination to the proceedings of the day, and the Prince and the Royal Commissioners took their departure amid the hearty cheers of the assemblage. As soon as they were gone, the barriers were removed, the seats and other temporary arrangements were swept away, and the stroke of hammers in every direction told that the work of removal and demolition had fairly commenced. For special useful discoveries, Council Medals of gold were granted; the Jury Medals were beautiful bronze. The American list is exceedingly respectable, and although our Department did not show so well as I could, or as all Americans could have desired, still it has made its impress on the world, it has spoken in deeds. Five Council Medals were granted to Americans, and some more should have been granted, especially one for Day & Newell's Lock. I greatly blame the Americans on the Jury before which it came, for not demanding a Council Medal for it—it was a shame that one was not allowed.

I send you the whole list of American prizes. [We have not room for their publication—the List of Council Medals we have published.]

The Meat Bread of Mr. Borden is greatly esteemed by those engaged in nautical affairs here; they well know the value of it for long voyages. McCormick's Reaper has made the fortune of its inventor, who has been invited to English Agricultural Dinners, and toasted as a benefactor to the English Farmer. The Reaper is of greater importance to the English than the American farmer.

It is reported that there had been some quarrelling between the Juries and Councils, but it tells well for all that there has been so little of this.

Messrs. Paxton, Fox, and Cubitt are to be made Knights, so it is reported. Various reports have been floating round, about the Building—one that it was to be re-built in another Park, but the most singular one was a notice in the Daily News, announcing that the erection of a Crystal Palace had been commenced on a smaller scale in New York, and that communications have been entered into with Austria, the Zollverein, Italy, and various other Continental estates, suggesting the transmission of their articles to America for the purpose of exhibition and sale. This I cannot believe; it would not be prudent to enter upon such a scheme so early after the World's Fair; I expect, however, to see a World's Industrial Exhibition in New York at some future day, and it can be made to rival the one just ended in greatness, but not without great preparation. I question if any other nation but Britain could, at present, have got up such an exhibition. The wealth at command, and prestige of power in Prince Albert to wield it, were things altogether favorable to the enterprize in England. But to-day, all that remains of the great pageant which, for the past five months, concentrated the curiosity of the whole world, lies only in its recollection, and the results which must proceed from it. I believe that its effects will go down for good to other ages. I hope it has taught all those who visited it, from whatever country, that it is perfectly possible for all men to live in peace, and to cultivate the arts of peace with a desire to excel and emulate, but at the same time to do so to mutual advantage.

A large surplus sum has been left in charge of the Commissioners, after paying all expenses. In a pecuniary point of view, England has altogether been the gainer. I suppose that she is a gainer by some millions of pounds at the expense of others, but at the same time she has made great sacrifices also, which are not accounted for in the bill of expense. I had hoped that the surplus money would have been divided among the juries to divide among exhibitors, to pay some of their expenses; this I believe would have been the most just way to have used it.

I will continue in Europe for some time longer, and may, from time to time, furnish you a letter containing things of interest relating to science and mechanics. Excelsior.

The Patent Office in Danger---To American Inventors.

As noticed by us last week, we will proceed to quote some extracts from the patriotic article of Mr. John C. F. Salomon, published in the Washington Union. Addressing himself to inventors, he says:—

The undersigned, one of your fraternity, takes the liberty of addressing a few lines to you from the seat of general government.

I am sorry to inform you that, after all your trouble and expense, you are likely to lose the use of the east wing of your noble Patent Office building, now nearly completed. It is now your imperative duty to be up and doing something effectual to defend your rights against the attacks of those who have no sympathies for you. Notwithstanding it is well known that this building was designed and erected for the especial use of the Patent Office, and that it was (in part) paid for out of the patent fund created by your contributions, and that the act of Congress of 1836, authorizing the erection of the building, is very clear and explicit, yet the present Secretary of the Interior, Hon. A. H. H. Stuart, without right or reason, I regret to say, intends to deprive you of your building, and appropriate it to the use of his new Department of the Interior, created within the past three years. I understand that he has declared that it is his intention to take possession of the Patent Office building before the meeting of the next Congress, and I believe he will carry his intention into effect, unless the President of the United States forbids the commission of so great a wrong on our rights; and this, I believe, Millard Fillmore will do as soon as he examines the several laws of Congress making appropriations for the erection of this building, and becomes well acquainted with the whole subject. The President will at once perceive that the Secretary of the Interior has no more right to take the Patent Office building for the use of the Census Bureau, Pension and Land Offices, than he has to take it for the penetentiary, which is also under his jurisdiction.

Sixteen years ago I was here for a patent for a new steam boiler. Since that time I have taken out several patents for new and useful inventions. In the winter of 1835—'36, I was in the Patent Office almost daily, and well remember the seven thousand beautiful models which were all consumed by the fatal conflagration of the 15th December, 1836, which entirely consumed the General Post Office building, wherein was contained the United States Patent Office. I also remember examining the drawings of the plans for a new fire-proof building for the Patent Office, prepared by William P. Elliot, Esq., architect and engineer, formerly of the Patent Office; and, being favorably impressed with the grandeur, simplicity, and fitness of the design, I begged the author to stick to his plan, and have it executed if possible. I was glad to learn that it was subsequently adopted by the Hon. H. L. Ellsworth, then Commissioner of Patents, the committees of Congress, and the President of the United States, General Jackson. I am much pleased to find that this plan is now being carried out by the government; and when completed according to the original plan, as published in the "Scientific American," of the first of February last, it will undoubtedly be the noblest structure of the kind in the world.

The purpose for which the several rooms and galleries were originally intended should be adhered to as closely as possible.

Congress should make a sufficient appropriation to finish the whole block as soon as possible, as it will be all required for the use of the Patent Office long before it can be completed. In less than half a century, I venture to say, the model rooms of the entire block will be densely crowded with models, designs, and specimens. The millions of ingenious foreigners from the European continent who are now hurrying to our shores will greatly increase the list of applicants for patents. Already nearly three thousand models are annually received, averaging nearly one cubic foot in size. In a few years this number will be more than doubled. Then where shall we find room for our models, if the Secretary of the Interior takes possession of the rooms for the accommodation of his army of clerks, who have nothing to do with the Patent Office? As a patentee and contributor to the patent fund, I solemnly protest against this meditated violation of the laws of Congress and the rights of inventors, on the part of the Secretary of the Interior. John Chs. Fr. Salomon.

[We have not the same opinion as Mr. Salomon, about no blame being attached to the present Commissioner of Patents.

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Galvanizing Iron---Protecting Steel from Oxidation---Sorel's Patent.

The accompanying specification, is in substance that of the patent of M. Sorel, of the city of Paris, France, which was patented in the United States, in December 1837, and for which an extension is petitioned for, as noticed by us in our last number.

It is well known to chemists and scientific men, that a galvanic action is produced by the contact of two metals, different in their natures, and that the most oxidizable of the two metals brought into contact becomes positively electrified, the least oxidizable, negatively electrified. This is the case with iron covered with tin, the least exposure of the iron makes it rust much faster than if none of it was covered with the tin, but the least oxidizable metal is protected from oxydizing by its contact with the positive electrified metal. It is upon this principle M. Sorel protects iron and steel from rusting. The metal chosen for covering iron is zinc, one more oxidizable than iron, and would be totally unfit for the purpose, only it has the quality that when its surface is covered with a thin coat of oxide, all further oxidization is stopped.

The different modes he has employed to carry out his invention are as follows :—

"First, applying the zinc to the iron or steel in the manner in which the tin is applied in the process of tinning.

Second, applying a galvanic powder in the manner of paint, which consists in mixing the zinc, reduced to fine powder, with oils, or resinons materials, so as to form a paint or varnish, with which the substances to be protected are to be covered, in the ordinary manner ot painting or varnishing.

Third, covering the article to be protected, with the galvanic powder, consisting of zinc finely comminuted.

Fourth, wrapping the articles to be protected in what I denominate galvanic paper.

Fifth, anointing or covering the articles with a galvanic paste, consisting of any suitable fatty matters, such as purified lard, in which the galvanic powder has been freely mixed.

The first process, that of coating the articles to be protected with metalic zinc, is to be effected much in the same manner in which tinning is performed, that is to say, the articles to be coated must be rendered clean and free from oxide, by processes analogous to those followed in preparing them for ordinary tinning, such as immersing them in diluted sulphuric or muriatic acid, scouring them, and so forth, which processes being well known, need not be described. The zinc, in like manner, must be fused in proper crucibles, or other convenient vessels, adapted to the nature and size of the articles to be operated upon, special care being taken to keep the metal covered with sal ammoniac, or other proper flux; and to regulate the heat in such way as is required by the volatile nature of the metal. The articles to be coated, after being dipped into the melted zinc, are to be withdrawn slowly, that too much of the metal may not adhere to them. They are then to be thrown into cold water, rubbed with a sponge or brush, and dried as quickly as possible, as otherwise they may be injured by the appearance of dark spots, which it is desirable to avoid.

When chains for cables, or for other purposes, are being withdrawn from the zinc, they must be shaken until sufficiently cooled to prevent the links from being soldered together by the melted metal. The coating of small chains requires careful management, but by the following procedure it is effected without difficulty. Whilst in the dilute acid, they are to be moved about to expose all their parts equally to its action, they are then to be dipped into muriatic acid, and immediately dried in a reverberatory furnace, the melted zinc being ready, and covered with sal ammoniac, the chains are to be put into it, and suffered to remain there about a minute; they are next slowly taken out by means of an iron skimmer, or other convenient instrument, which will allow as much of the zinc to drop from them as can be got rid of in that way; the links, however, will still retain too much zinc, and will be soldered together. To correct this they are to be put into a reverberatory furnace, to be covered with charcoal, and retained at a red heat for about a quarter of an hour, during which time they are to be moved about by means of an iron poker; by this treatment the excess of zinc will be discharged; they are then to be drawn towards the mouth of the furnace where they are kept in motion until the zinc is solidified. When small nails, and such like articles, are to be coated, the process should be performed in small crucibles, this being necessary to prevent the danger of spoiling a considerable portion of zinc, which results when iron has been kept in it a considerable length of time, as it is thus rendered unfit for the purpose of a protective coating. In all cases the purest zinc should be employed. Wire may be coated by passing it through the melted zinc, as it is wound from one drum or reel, on to another.

When articles of iron have been coated with zinc, it is sometimes desirable to cover this coating with one of tin; more especially when culinary vessels are the subjects of the operation. It may also be resorted to when it is desired to give a brighter and more handsome surface than the zinc affords; such a coating of tin will not destroy the galvanic effect of zinc; and it is to be effected in the ordinary way of tinning, particular care being taken not to heat the tin too highly, or to keep the articles in it so long as to remove any portion of the coating of zinc.

The foregoing is the only part of this patent in useful practice with the exception of coating metals with zinc paint, which need not be further described than to say, it consists of zinc reduced to powder, either as an alloy or pure, and mixed with oil. A peculiar action takes place with zinc paint, as we have seen with our eyes, viz., the zinc after a time, leaves the oil and adheres to the metal, covering it with a pure metalic surface, and this it does, although the paint may have been applied as an oxide of zinc mixed with oil.

We hereby present the claim, to show the extent of M. Sorel's invention.

Having thus explained the principle upon which my process of protecting iron and steel from rusting, or oxidating, is dependant; and having also given the various modes in which I have contemplated the carrying the same into effect, I do hereby declare that what I claim as of my invention, and wish to secure by letters patent, is the employment of zinc, in various forms, as a covering to the respective articles to be thereby protected, as herein set forth. I do not claim to be the discoverer of the principle of the protection of metals from oxidation by galvanic action; nor do I claim to be the first to have proposed the employment of zinc for the preserving of iron therefrom; masses of zinc having been applied, or it having been proposed to apply it in masses, to steam engine boilers, and probably to other articles, with this intention; but from this, my plan, or mode of procedure, differs as obviously as it surpasses it in efficiency, and in its applicability to numerous purposes in the arts where its application in masses would be impossible, or altogether unavailing.

[We know nothing about the remuneration which the scientific Frenchman has received, but this much we can say about his process, it is one of the most useful ever introduced into our country.

Varieties in Science.

Magnetic Improvement in Railroads.—We have lately seen announced a plan to increase the power of traction in locomotives, by pressing them against the rails by means of an artificial loadstone. We are permitted to describe a recent discovery which the inventors hope to make still more perfect, and which is just the reverse of the above. It consists in reducing the friction of the cars on the rails to a mere nothing, by an electric battery, so arranged as to raise and very nearly suspend them in the air—a perfect suspension being only prevented by the necessity of a slight pressure to maintain the cars on the track. The inventors design first to apply their process to the transportation of passengers, and they expect to travel at the rate of eighty miles an hour, with less expense and greater safety than is now done at twenty-five miles. Their rails are in the H form, and not weighing seven pounds to the foot, and supported by wooden pillars, like lamp-posts, at an elevation of 6 feet above the ground, and three feet apart. The cars, only 2½ feet wide, but 30 feet long, are suspended between them upon wheels of a small diameter, rolling, of course, upon the top of the rails. At the two extremities of each car, and in the middle, at a sufficient distance from the wheels, are attached powerful magnets, made of an immense number of reels of wire, wound round pieces of soft iron, the poles placed directly below the rails, and as near them as practicable.—The effect is easily understood. As soon as the wires are united to a pile to form a circuit, the magnets exercise a powerful attraction on the rail; but this being immovable, the magnet itself obeys the attraction, and the car attached following, the slight pressure which it still exercises on its wheels is just equal to its weight, minus the attractive power of the magnets. It may be observed that electricity in this arrangement will not cost much. It is not used as motive power, but as static pressure; it does not, consequently, become exhausted, and may be continued without much expense. This invention is very good in principle. We cannot yet judge whether it has been sufficiently elaborated to be practicable. The first invention, above alluded to, to press locomotives against rails, is not worth much, in our opinion, to apply to common locomotives, which may, without difficulty, be made weighty enough for any labor required of them; but in connection with the second invention, it is invaluable, as it allows the use of locomotives at least as light as the cars hemselves, and this is of great importance when the structure does not stand upon solid ground.—[New York Tribune.

[This is another static pressure deception. It comes identified with the same features as the centrifugal one. Just think of "the magnets on the cars being attracted to the rails and the cars following," and then the static pressure of magnetism to boot, surely nothing can resist the evidence of this *great railroad improvement*. It is a rich improvement truly, we wonder what other feat is next to be performed by static pressure? There is a great amount of ignorance displayed in the above; it is wrong in principle, while the first one is right—the one condemned. If such a plan could work (but it cannot) the same advantage could be obtained by having lighter locomotives; but how in the name of common sense the author comes to the conclusion that it allows of the use of lighter locomotives, when at the same time, it is intended to raise them off the rails, is more than we can understand. It also puzzles us exceedingly to understand how the electric magnets will be made to operate; and, above all, to account for the *static* presure of a battery in active operation, which it must be, when the circuit is formed.

A great amount of adhesive surface is what is required in locomotives; this, we think, has been demonstrated by the recent trials at Lowell. The invention above is an improvement on a wrong principle. It very much resembles the old "Dove" scheme, to lighten steamboats—buoy them up—having huge balloons on their decks. In 1844, the scheme of the "Dove" was got up, and many shares were taken in it, as many, no doubt, as in the centrifugal scheme. The green ones got the full value of their subscriptions in 0 0 0.

Gutta Percha Boats.—The late English expeditions in search of Sir John Franklin have proved the value of gutta percha in a remarkable manner, each of them took out sledge-boats of this substance, for use among the masses of ice. Fitted with a skate, the boat served as a sledge; floated, it would carry five or six persons, with ample provisions; at other times it might be folded up, or converted into a wrapper or bed-tent, safe against the cold, that three or four men might sleep under. Its weight was only eighteen pounds. Moreover, after undergoing all the rough work of the voyage, it returned to England not in the least damaged, and in almost as good a condition as when it left.

Daguerreotypes on Glass.—A Berlin artist, says a foreign exchange, has discovered the art of fixing daguerreotypes upon glass, which is covered with fusion of zinc or gold. The operation takes about five minutes.—When dipped into water, or varnish, the subject taken is very distinct. The artist is enabled to give any coloring to the picture he may like, and has even succeeded in combining two different colors upon the same daguerreotype.

Boston Machinists in Cuba.—Cuba is almost wholly suplied with machinists from the United States.

There is in nearly every plantation in Cuba, a sugar mill driven by steam engines, built usually in New York or Boston. In these mills it is necessary to have some one well acquainted with machinery. The Cubans are not qualified for the situation, and the planters are forced to secure machinists from our country. Accordingly during the month of October, some hundred machinists of Boston leave for Cuba. The sugar crop commences soon after their arrival, and they are busily employed till June or July. Each man has a confidential negro whom he can leave in the charge of the mill, besides having as many assistants as he wishes. He is obliged to work but little, simply overseeing and directing.

For this service he receives from six to ten ounces a month, varying from one hundred to one hundred and fifty dollars a month.

In June, the crop is manufactured, and as the weather grows warm and unhealthy, the machinists return home, and spend the summer in a more pleasent climate. During the absence of the overseers, the mills are closed and repaired, and when the delegation again return in October, they find everything prepared for the commencement of the new season.

Hydrogen Gas for Illumination.—Our attention has been called to a short article upon this subject, in the last number of the American Journal of Science, page 260, by Prof. B. Silliman, Jr. In his recent European tour he had an opportunity of seeing the successful application of M. Gillard's patent, by which he claims the production of a useful light, and great heat, from the combustion of hydrogen gas in contact with a coil of platinum wire. The hydrogen is produced by the decomposition of water, effected by passing steam through retorts charged with charcoal reduced to small fragments and heated to an intense degree. The resultant gas after being conducted through lime water, which removes the carbonic acid, consists almost wholly of hydrogen. This is burned in contact with a cage or net-work of platinum wire gauze surrounding an ordinary argand burner, protected by a glass chimney. "This contrivance," he states, "is perfectly successful, and the light given out from gas lamps of this construction is extremely vivid and constant."

The following are some of the advantages claimed by the invention :

"1. The gas so produced is cheaper than any other mode of artificial light, costing, as is asserted by M. Gillard, and sustained by others, only about one-sixteenth the average cost of coal gas. 2. The gas has no unpleasant odor. 3. This mode of producing gas may be applied to any existing gas works by a slight modification of the retorts, and without any essential change in any other portion of the apparatus. 4. the cheapness of this mode enables it to be applied with great advantage as a fuel for cooking and for numerous purposes in the arts. 5. The nuisances resulting from the presence of large coal gas works in populous districts are entirely avoided. 6. The arrangements are so simple and inexpensive that every establishment where it is desired to employ light and heat, may erect its own apparatus, all the materials employed being everywhere accessible."

[The specification of this invention we published on page 333, Vol. 5, Sci. Am. If hydrogen gas can be produced cheap enough, it must be of great benefit for cooking, &c. M. Gillard, however, is not the discoverer of the platinum wire coil for the purposes stated. Sir Humphrey Davy is the discoverer of this property of platinum. This was done while prosecuting his researches upon the "safety lamp." Those who have Ure's Old Chemical Dictionary, published in Glasgow, 1821, will find a description of this in the article on combustion. It says that "when heated platinum was introduced into hydrogen, it ignited and glowed." A very beautiful and full description of the action of fine platinum wire in various gases will pay the reader for a careful perusal of the said article.

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NEW INVENTIONS.

Great Improvement in the Construction of Chains.

There are some things which appear to escape general observation, as it respects the necessity of improvement; this has been the case with the one before us, for no man can question the value of it after it is made, although we believe few, if any but the inventor, ever thought it was required. The improvement is on the simple link of a chain, whereby its strength is doubled; and whoever thought this could be done, or does not wonder that it was not discovered long ago, as chains have been made from time immemorial, and in every nation on the globe. The inventor is Mr. Ledyard Colburn, of Birmingham, New Haven Co., Conn., who has taken measures to secure a patent for the same. The invention consists in simply uniting the two ends of each link together, by doubling them over one another, the same as if we should hook, "mason fashion," the two little fingers into one another. The old unwelded links, on no chain, were ever made with their ends hooked into one another, but simply brought together and formed (the most common way) like an 8. Now what are the advantages of this improvement? They are great. We have tried the old link and the new one, in a *Jack*; they were both made of iron rods of the same diameter, and we found that the new link stood more than double the power applied to the old link, before it gave way; in short, it is as strong as the welded link.

When we consider the usefulness and extensive application of iron chains to so many processes and operations, the value of this invention cannot be estimated; for the link can be made as fast and as cheap as the old unwelded link, while it has all the advantages of being as strong as the welded one.

Pencil Case Improvement.

Mr. J. H. Rauch, of this city, has taken measures to secure a patent for a very excellent improvement in Pencil and Pen Cases, which cannot fail to come into general use. In all the pencil cases constructed at present, for the use of a pencil and a gold pen, it is well known that the pen has to be taken out and slid into its receptacle backwards, when we wish to use the pencil, and vice versa: this is both troublesome and inconvenient. The old-fashioned gold cases for pen and pencil required no such manœuvring, for the pen had one slide and the pencil another, and the one was made to slide past the other in the case, thus making use of both pen and pencil very convenient; this kind of case, however, was not so neat as the ones now made, for a ferrule was employed for each slide; the improved case has no ferrules like the old kind; it is as neat as the new kind, and has all the advantuges of the old convenient cases.

Improvement in Cast-Iron Car Wheels.

Messrs. John Canard and John McDonough of the city of Pittsburg, Pa., have taken measures to secure a patent for an improvement in Cast-iron Car Wheels, which consists in having the wheels cast with circular and eliptical braces, having central openings in them, which unite the rim and hub together. It is stated that the improvement allows of wheels being cast so as to make every allowance for contraction in the cooling of the metal, without employing cooling flues or ovens for that purpose.

Improvement in the Coiling Roving Machine.

Mr. M. R. Lemman, of Jackson, Miss., has taken measures to secure a patent for a very valuable improvement in the Coiling Machines to pack the cotton roving in the cans as it comes from the drawing-frame. The improvement consists in constructing the "Coiler and Packer" with a false head, which is not only made to revolve, but to fall and rise within the can, and which packs the sliver in an easy and regular coil in the can, without the assistance of the usual feeding rollers, to feed the sliver into the said can.

Improvement in Endless Chains for Horse-Powers.

Mr. P. H. Kells, of Hudson, Columbia Co., N. Y. has taken measures to secure a patent for an improvement on endless chains for horse-power machines, which consists in forming the joints of the several links with an offsett in each, which causes the links of the chain, when fitted, to lie in a straight line, and thereby allow the chain to impart a more steady motion.

Iron Stone---Terra Cotta.

Mr. Edward Selby, of this city, has made a most beautiful discovery in the manufacture of stone ware, by which, out of very common and cheap materials, abounding in many parts of our country, he makes a ware resembling free stone in appearance, but is much harder and more durable. The ware is of a rich brown color, and can be varied to any intensity of shade. It may be employed for capitals, cornices, mouldings, and all ornaments of brown stone buildings.

ERRICSSON'S CALORIC ENGINE.

Figure 1.

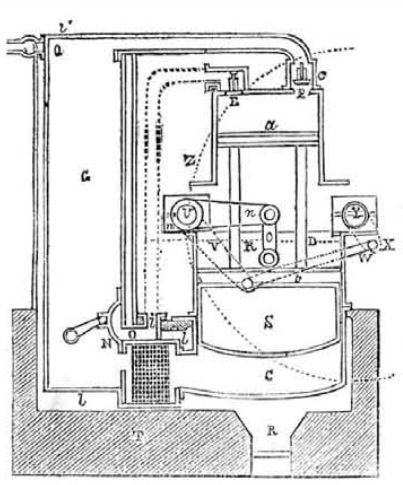
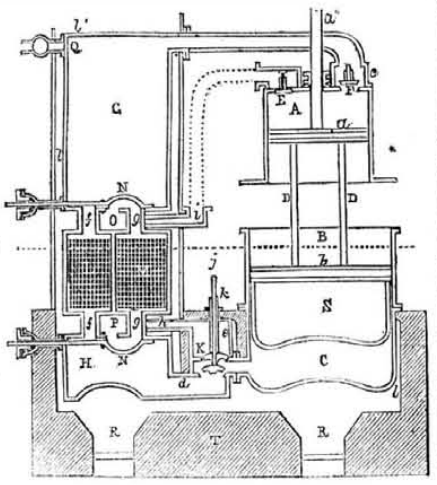


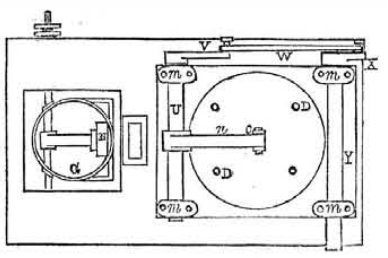
Figure 2.



The accompanying engravings illustrate a patent recently secured in England, in the name ot Mr. Edward Dunn, of this city for an invention of Mr. Ericsson, the well-known inventor.

"Description.—Figs. 1 and 2 are longitudinal sections of two arrangements of this engine which are alike in all essential points, but differ in some details. Fig. 3 is a horizontal section of fig. 2. A B, figure 1 are two cylinders of unequal diameter, but nearly alike in all points; *a*, and *b*, are their pistons; A is the supply, and B the working cylinder; *a'* is the piston rod; C is a cylinder with a spherical bottom, called the expansion heater, and is affixed to the working cylinder. D D are braces which connect the pistons, *a b*. E is a self-acting valve opening inwards to the supply cylinder. F is a similar valve, opening outwards from the said cylinder and contained within the valve box, *c*, which is connected by a pipe with a cylindrical vessel, G. H is a

Fig. 3.



cylindrical vessel with an inverted spherical bottom, called the heater. J is a conical valve supported by the valve stem, *j*, and working in a valve chamber, which forms a communication between the expansion heater, C, and heater H, by the passage, *d*. K is another conical valve, supported by the hollow stem, *k*, and contained within the chamber, *e*. L and M are two vessels of cubical form filled to their utmost capacity (excepting small spaces at the top and bottom), with discs of wire net or straight wires, closely packed, or with other small metallic or mineral substances, such as asbestos, so arranged as to have minute channels running up and down; the vessels L and M are named regenerators.

f f g g are pipes, forming a direct communication between the receiver, G, and the heater, H, through the regenerators; N N are two ordinary slide-valves, arranged to establish alternate communications between the pipes, *f f*, and *g g*, and the exhaust-chambers, O, and P; *h* is a pipe, communicating between the valve-chamber, *e*, and exhaust-chamber, P; *i* is an outlet-pipe, leading from exhaust-chamber, O; Q is a pipe leading into the receiver, G, provided with a stop-cock; R R are fire-places for heating the vessels, H and C; and *l l* are flues, leading from said fire-places and terminating at *l'*. S is a cylindrical vessel, attached to the working piston, *b*, having a spherical bottom, corresponding to the expansion-vessel, C; this vessel, which is called the heat intercepting vessel, is to be filled with fire-clay at the bottom, and ashes, charcoal, or other non-conducting substances towards the top,—the object being to prevent any intense or injurious heat from reaching the working piston and cylinder. T T represent brickwork, or other fire-proof material, surrounding the fire-places and heaters.

In figs. 2 and 3, the same letters of reference are used for similar parts; which are marked as follows:—U is a rocking-shaft, supported, at both ends, by appropriate pillar-blocks or bearings, *m*; *n* is a crank, projecting from the centre of such shaft, and connected, by a link, O, with the working piston, *b*; V, is another crank, on the extreme end of the rocking-shaft, connected by a rod, W, with a crank, X, on the shaft, Y; and Z, represents the circumference of a fly-wheel, paddle-wheel, propeller, or other rotary instrument to be worked by the engine. Before describing the operation of the improved engine, it should be observed, that the piston-rod, *a'*, only receives and transmits the differential force of the piston, *b*, viz., the excess of its acting force over the re-acting force of the piston, *a*; and this differential force may be communicated to machinery by any of the ordinary means, such as links, connecting rods, and cranks; or it may be transmitted directly for such purposes as pumping or blowing. The conical valves K, and J, (fig. 1) may be worked by any of the ordinary means, such as eccentrics or cams, provided the means adopted be so arranged that the valve, K, will begin to open the instant the piston, *b*, completes the up-stroke, and be closed again the instant the piston completes the down-stroke; whilst the valve, J, is made to open at the same moment, and to close shortly before, or at the completion of the up-stroke. In like-manner the slide-valve, N', fig. 2, is to open and close as the piston, *b*, arrives, respectively, at the termination of its up and down-stroke, similar to the slide valve of an ordinary high-pressure engine. It will be seen, that the link, *o*, like the piston rod, *a'*, only transmits the differential or useful force of the piston, *b*.

The operation of the engine shown at fig. 1, is as follows:—Before starting, fuel is put into the fire-places, R R, heaters and lower parts of the regenerators are brought to a temperature of about 500° by means of a hand-pump, or other similar means; and air is then to be forced into the receiver, G, through the pipe, V, until there is an internal pressure of eight or ten pounds to the square inch. The valve, J, is then to be opened; when the pressure of the air that enters beneath the piston, *b*, will cause the same to move upwards; and the air contained in the cylinder, A, will be forced, by the piston, *a*, through the valve, F, into the receiver. The slide valves, N N, being previously so placed that the passages, *f f*, are open, the air from the receiver will pass through the wires in L, into the heater, H, and further into the expansion heater, C,—the temperature of the air augmenting, and its volume increasing, as it passes through the heated wires and heaters; the smaller volume, forced from the cylinder, A, will, in consequence thereof, suffice to fill the larger space in the cylinder C. Before the piston arrives at the top stroke, the valve, J, will be closed; and, at the termination of the stroke, the valve, K, will be opened. The pressure from below being thus removed, the piston will descend, and the heated air in the cylinder, C, will pass through, *e h* P and *g*, into the regenerator, M; and, in its passage through the numerous spaces or cells formed between the wires, it will part with the caloric gradually,—falling in temperature until it passes off at *i*, nearly deprived of all its caloric. The commencement of the descent of the piston, *a*, will cause the valve, F, to close and the valve, E, to open; and thereby a fresh charge of atmospheric air is admitted into the cylinder, A. At the end of the down-stroke, the valve, K, is closed, and the valve, J, again opened; and thus a continual reciprocating motion is kept up. It will be evident that, after a certain number of strokes, the temperature of the wires, or other matter contained in the regenerator, will change: that of M, will become gradually greater, and that of I, diminish. The position of the slide-valves, N N, should, therefore, be reversed at the termination of every fifty strokes of the engine, more or less; and then the heated air, passing off from, C, will pass through the partially-cooled wires in L; whilst the cold air from the receiver will pass through the heated wires of M, and, on entering H, will have attained nearly the desired working temperature. In this manner the regenerators will alternately take up and give out caloric; whereby the circulating medium will principally become heated independently of any combustion after the engine shall have been once put in motion.

The operation of the engine represented at figs. 2 and 3, is like that just described;—excepting that the regenerator is arranged in a single vessel, and that the metallic substances therein take up the caloric from the air that leaves the working cylinder or vessel, C, and return the same to the air that enters the working cylinder at each stroke, instead of transmitting and re-transferring the caloric at at intervals, as in the other figure."

The nature of this invention is to use heated air as a propelling agent, and to save the heat of this air by the devices, substances, and arrangement of machinery described, upon which are based five claims, all of which, however, are worthless, if the principles upon which the engine is built are not correct, and that they are not correct we have not the least doubt.

If a person were to say, "how absurd it is to let the steam of an engine escape into the atmosphere after it has driven the piston to the end of a cylinder, why not let it act upon a wheel confined in a non-conducting case, and thereby let the steam drive the wheel in one direction forever," he would appear to reason as plausibly, as any person, yea, and more so, who attempts to impart a certain amount of propelling power to machinery continually, without continual expense of the impelling agent, and this is what the above invention sets out to do. It is well known that the economy of our steam engines depends upon a perfect vacuum, the above is constructed upon the very opposite principle; therefore the effective power must be always on the decrease from the first to the fiftieth stroke spoken of, for although the cold regenerator, M, may act like a vacuum at the commencement, it is continually losing this character, hence it becomes in a short time not the absorber—the regenerator, but the generator, and to us it appears that the maximum between the effect and resistance, will just depend, like all other caloric engines, upon the amount of fuel used continually. We cannot see how it can be otherwise. It would also be easy to show chemically, that heated air is decidedly objectionable as a propelling agent, and that the non-conducting substances in S to molify its injurious effects upon the piston, packing, &c., must themselves give out continually the very amount of heat which they absorb, to a colder body, or if they don't absorb heat from a hotter body, they do no good whatever. Sterling's hot air engine, is said to be a good one (but we don't believe it) yet he never pretended to get up a perpetual motion, as is done in the above specification.

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Scientific American

NEW-YORK, NOVEMBER 8, 1851.

The Great Exhibition of Industry.

Last year Prince Albert projected the holding of a Great Fair in London, as an exhibition of the industrial products of all nations. Consequent upon the maturement of the project, invitations were sent to all the established governments in the world, to come there and exhibit the fruits of the genius and industry of the people belonging to the various countries connected with or attached to those governments. The invitations were responded to by every government invited, our own among the number. The Exhibition opened in the first week of last May, and closed on the eleventh day of last month, a period of five months. Since Adam was placed in Eden, history affords us no evidence of any other affair like it in utility, greatness, and grandeur. It is true that the Greek Fairs might justly be called the preludes of this modern one: for to them the Tyrian came with his purple, the Etruscan with his vase, and the Egyptian with his glass; but how different were the objects of the two. The old Fairs were instituted for the purposes of barter, the modern Great Fair merely as an exhibition of the state of the arts and manufactures of different countries. What a change has come over the world since Eschines reproached Demosthenes with trafficking like a rogue at the Olympian Games.

To receive the products of industry, in the course of a few months there was a building designed and erected, the very recollection of which will go down to posterity as one of the World's wonders. A few months before it was commenced, the materials of which it was made were lying by the sea shore, in the shape of sand and salt, and in the bowels of the earth as the crude ore of iron. But although that building was wonderful on account of the materials of which it was composed, it was more an object of wonder and admiration on account of its harmonious proportions, its rare originality of design, and its great dimensions. Some idea of its vast extent may be formed when we consider that, after its halls were filled with huge statues, monster engines, carriages, implements and goods of every description, yet sixty thousand people could freely move through its spacious avenues and corridors. In that building, from the first day it was opened until the day it was closed, there were seen, day after day, from five to sixty thousand persons, all intent upon surveying the handiworks of men who lived near and remote, and whose genius and art were as different and separate as their climes and tongues. What strange ideas, and what strange words were uttered there. The Greek and the Roman were there, but how different from the Greek and the Roman of old. The Egyptian and American, the Scythian, and Saxon; the German and Gaul were there, but what a change since the Carthagenian and Greek were the princes in science and art.

The Great Fair was held in a country whose inhabitants, in the days of Tacitus, dwelt in caves and were clothed with the products of the chase—savages they were, these our forefathers, and so low in the scale of civilization as to be considered unfit for Roman slaves. Now what are they, and what is their country? They are far more elevated in civilization than the Roman, and their empire is greater than was that of the proudest Cæsar. How different is the modern from the old ages of the world. The steamboat and the railroad were then unknown, and the caravan from India to Thermopilæ was more than a year on its tedious journey. Then the world was a scene of wide-spread ignorance; nations living a few hundred miles separate were often totally ignorant of one another, hence wild men of the woods haunted the imaginations of their poets, and satyrs and strange beings peopled the unexplored forests; yea, even in Queen Elizabeth's time, a dead negro in London was as great an object of curiosity as any thing in the Exhibition. But we live no longer in "the wide, wide world;" the agencies of modern invention have made all mankind next-door neighbors. After all, however, the philosopher standing in the midst of the Great Exhibition, and viewing the wonderful and various works of art displayed there, and, above all, hearing so many languages and seeing so many varieties of men, could not help exclaiming—"what a queer being man is;" how applicable the sentiment, "he is fearfully and wonderfully made;" and, after viewing all the products of his genius and skill, he could not help quoting the poet, "the greatest study of mankind is man."

The question arises, what will be the result of the Great Industrial Exhibition? If no good will be accomplished, then it must produce evil; there can be no question of this, we think. We believe that great good has been done, and more will yet result from it. Our countrymen have come off with honors—great honors. We advocated our participation in the Exhibition, for we knew our countrymen could excel in many things; they have excelled, and it has been admitted that "every triumph of practical utility belonged to the Americans." Although our countrymen have done well, for which we return them our sincere thanks for their heroic individual efforts to sustain the honor of their country; still we have regrets, for we know that we could have excelled in five hundred things in which we were not represented at all. The great honor which belongs to our American inventors who were exhibitors there, consists in this, *they have extorted praises from those who, at one time, heaped contumely upon them.*

Medical.

New Cure for Consumption.—The Mobile Tribune directs attention to a new cure of consumption described in the New Orleans Medical Register, by Professor Stone, on the virtues of the "Phosphate of Lime in scrofula and other depraved states of the system," which is of some moment. It was suggested by an essay in the London Lancet, on the "physical pathology of the oxalate and phosphate of lime, and their relation to the formation of cells."

"The conclusions of the author (says Professor Stone) are based upon careful chemical research and results from the use of the remedy. His researches show that in man, as well as in vegetables and inferior animals, phosphate of lime as well as albumen and fat is abundantly essential for the formation of cells, and he considers that many of the pathological states of the system depended upon a deficiency of this salt. The affections in which it is advised are ulcerations dependant upon general dyscrasia, and not a mere local affection; infantile atrophy; in those suffering from rickets and consequent diarrhœa and tuberculous diseases, particularly of the lungs in early stages."

Struck by this article, Professor Stone tested it, and he thus describes three cases in which virtues were very obvious. The first was that of a slave, who was admitted to the Professor's Infirmary in July, with a disease of the nose, the whole system showing great progress in scrofulous decay. The usual remedies were unsuccessfully applied until August, when cod-liver oil was used, but the disorganization of the stomach was increased by it. The phosphate of lime was then applied—eight grains, three times a day. Its good effects were soon apparent. It and the oil were therefore administered together, and the patient soon was restored to health.

The second case is that of a young lady, aged 24. Her disease was one of "unmixed phthisis, which might have been expected to terminate in the course of a few months," fatally. The upper parts of both her lungs were beginning to soften. The case was evidently a bad one. The treatment of cod-liver oil was at first used, but without marked improvement. The phosphate of lime was then administered with the oil, and the result, as in the case of the negro, was soon apparent. The patient was rapidly getting well.

The third case was that of a child, seven years of age, in which the phosphate of lime was used with complete success.

Whatever can alleviate or prove a curative to this dreadful disease—a disease which claims more victims than any other in our city, and in the whole of the Eastern and Middle States, has great claims upon public attention. Of course we cannot do anything more than present the above statements; we have no opinion to give but this, that we remember having heard, twenty years ago, of the phosphate of lime, in the form of egg shells, being prescribed successfully in two cases of consumption.

Pork as Food.—The Boston Surgical and Medical Journal states that the New Hampshire Shakers have abandoned the use of pork as an article of food. It believes the Shakers will be gainers in health by this resolution. It gives Moses the credit of being sagacious in interdicting its use among the Jews, and believes he well understood its injurious effects upon the Egyptians. "Scrofulous affections, if not generated," it says, "are thought to be aggravated by the use of pork, and measles have been charged to its use." It states that we suffer more from skin diseases than the people of those countries where pork is not used as food. We do not entertain the same views as the "Journal." Pork made from good corn and potato-fed animals, is just as healthy food as any other. In some countries where pork is little used such as Norway, Denmark, the Highlands of Scotland, &c., cutaneous diseases are more common than with us.

Iodide of Potassium for Asthma.—F. H. Dean, M. D., read a paper at the September meeting of the Medical Society of Virginia, in which he relates three cases of successful treatment of asthma by the use of hydrate of potass. He was first informed of its beneficial effects by a clergyman of Illinois, who, for a great number of years, was very ill with the disease, and who had travelled and consulted the first physicians in Europe, for relief in vain. He is now able to preach, and he is enabled to ward off a paroxysm of this disease by the use of this medicine. He has prescribed eight grains as a dose, taken every four hours, in severe cases.

Alum for Lead Cholic.—M. Brachet, of Paris, in a chapter on the treatment of this disease, looks to alum as the sheet-anchor in its successful treatment. He has employed it since 1838, without accident or disappointment occurring, He prescribes it in doses of one and a half to two drachms, in barley-water, to be taken during the day, in drinks, to which has been added 50 drops of laudanum. (This quantity is to last all day, not in one drink.) If the bowels do not act by the third day, a mild laxative is given, and the case is complete. More than 150 cases have been treated thus with complete success, the alum being continued for a day or two after the symptoms had disappeared. Alum, it will be remembered, is the sulphate of alumina, and bears upon its front, a good recommendation. It is a simple medicine, and has also done good service, applied in the same way, for dysentery.

Complimentary to the Scientific American.

Mr. Claiborne, editor of the New Orleans Courier, in speaking of the Scientific American, says it "is certainly one of the most valuable journals in this or any other country, and its contents are full of instruction and entertainment to the mechanic, or planter who desires to embelish, improve, and economize labor, to all classes of readers, in short it is a most valuable publication. It is very ably edited, its details and explanations render the most intricate piece of machinery plain and practicable. We strongly commend it to the public."

The Vicksburg Miss. Whig say:—

"We do not hesitate to recommend it as the best paper of the kind in the United States."

The Savannah Georgian says:—"Common consent of all acquainted with it, pronounces it a work of genuine and unquestionable merit."

The Portland Transcript says:—The information it contains during the year on a thousand topics is worth many times the price of subscription."

Rev. T. F. Norris, editor of the Boston Olive Branch, an interesting paper—has done the Scientific American good service by frequent notices. In a late number he says:—

"This is a paper which should be in the hands of every mechanic, and every body wishing a general knowledge of mechanical science, and the improvements constantly being made in the mechanic arts. It well deserves a generous patronage, which we are happy to learn it enjoys."

The Journal, Reading, Pa., says:—"This paper is the best scientific and mechanical journal in the country."

The Reveille, Pekin, Ill., says:—"It gives the earliest and most valuable accounts of all the various inventions and improvements going on in this country or in Europe."

The Cultivator, Columbus, Ohio, says:—This is a most valuable and reliable record of inventions and improvements. Its reputation is too well established to need any endorsement from us."

The Fort Wayne, Ind., Sentinel says:—"This truly useful journal contains a larger amount of valuable information for mechanics, manufacturers, and scientific men than any periodical in this country."

These notices are copied from journals published in various sections of our country. We select these out of a large number, and trust our readers will pardon us for accupying space properly belonging to them.

Electro-Magnetism as a Motive Power

Examiner Page, M. D., of the Patent Office, has been in our city during the past and present weeks, and has delivered lectures on his Electro Magnetic Reciprocating and Rotary Engines. His reciprocating engine is of eight horse-power, and resembles a horizontal steam engine. We were highly pleased with his experiments and his lectures, but we will leave all further explanation of them until our next number, when we shall present something to our readers on the subject, both useful and interesting. A number of papers have given sketches of the lectures, but they are very unsatisfactory, and do not touch the main scientific and mechanical points. We hope to be able to do so with satisfaction to our readers.

Patent Case.

U. S. District Court, Philadelphia, Judge Grier presiding; Oct. 27, 1851.—The case was Burtis vs. Ashton, being an application for a special injunction to restrain the defendant from manufacturing mouldings by the Knowle's Moulding Machine, which is alleged to be an infringement of the long-litigated Woodworth Planing Patent. The injunction was refused. The counsel for the complainant then asked that the matter might be referred to a Master in Chancery, with authority to examine and report. This was opposed, and an issue asked to try the question of infringement, which was granted by the court. An application was then made that the defendant enter into security to indemnify the complainant from damages *ad interim*. This was likewise strenuously opposed, and the application was dismissed. Theodore Cuyler, Esq., for complainant; Henry B. Hirst, Esq., for the defence.

Great Patent Case---McCormick's Reaper.

U. S. Circuit Court, Albany, N. Y., October 31; Judge Nelson presiding.—This case occupied the court for six days: the parties were McCormick vs. Seymour & Morgan, of Brockport, N. Y. The action was one at law for the infringement of the patent of the Virginia Reaping Machine, the same which has cut such a glorious figure in England, and for which the Gold Council Medal of the Great Exhibition was awarded.

The jury rendered a verdict in favor of the plaintiff, with damages against the defendant of the great sum of $17,606.

Telegraph Case.

U. S. Circuit Court, Philadelphia.—Judge Kane gave his decision on last Monday morning (Nov. 3rd) in the case of Morse vs. Bain sustaining the claims of Morse throughout. The case is to be taken to the Supreme Court.

Steam Governor Valves.

In connection with our notices last week, of Steam Engines, we intended to speak of Junius Judson's "Governor Valves" on exhibition at the Fair, for which a gold medal was awarded. Patents for this improvement have been secured in this country and England, and it has been successfully applied to several steam engines, with the most gratifying results. The improvement consists in making a valve of any form, to move without friction, by the action of the steam, and also with apertures which increase in diameter as the valves open, so that the same resistance will open the same area of valve opening, or nearly; whether the load upon the engine be great or small. Mr. Judson resides in Rochester N. Y

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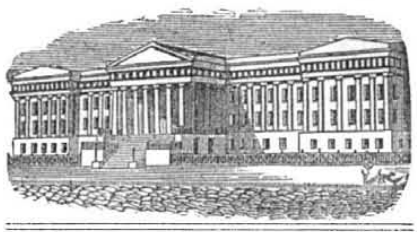

☞ Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improvements. No charge is made except for the execution of the engravings, which belong to the patentee after publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING OCTOBER 28, 1851.

To Myron Cory, of Jerseyville, Ill., for improvement in Seed Planters,

I claim the employment of the Indicator, having its ends bent as described, or in any other manner substantially the same, and secured on the main shaft, in such a manner that it can be disengaged, or thrown into connection with the wheel, as desired, for the purpose of indicating the place where the corn has been planted, in the manner and for the purpose substantially as set forth.

To Merritt S. Brooks, of Chester, Ct., for improved means for attaching Augers, &c., to their handles.

I claim the method of securing augers and other implements to handles, by means of a socket, ferule, or cylindrical slide, constructed as described, viz., the socket being placed underneath a mortise hole in the handle, and perforated with an oblong slot, the edges of the slot being bevelled to correspond to notches in the shank of the implement, the upper surface of the socket being inclined, and the shank moved along the slot by means of the ferrule or cylindrical slide, by which the bevelled edges of the slot bind or wedge in the notches, and the taper form of the shank drawn firmly in the hole through the ferrule slide, substantially as described.

To A. C. Gallahue, of Metamoras, O., for improvement in machines for Pegging Boots and Shoes.

I claim splitting the peg from the peg-wood and driving it into the sole of the shoe, by a single blow of the plate, acting on the peg-wood, and forcing it upon the knife, substantially as described.

I also claim mounting the peg-wood or block in a vertical sliding carriage, or the equivalent thereof, in combination with the stop plate, knife, and fingers, operated substantially as set forth.

To S. H. Gilman, of Cincinnati, for improvement in machines for Drying Bagasse.

I wish it to be understood that I do not claim, for such purposes, a heated cylinder, revolving upon an inclined axis, such cylinders, in various forms, having been long in use; but I claim, first, the arrangement, substantially as described, of two cylinders, one so secured by hollow bolts or rivets, concentrically within the other, as to leave between them an annular steam space, crossed by ventilating apertures, and the whole made to revolve around an inclined axis, for the expeditious drying, free from the danger of accidental ignition of bagasse and the like substances.

Second, the steam and condensed water pipes revolving together, one within the other, within a common journal bearing, and entering the steam space of the cylinder, in oppositely oblique directions, as described, for facilitating, at the same time, the discharge of the water and the admission of steam, during the revolution of the cylinder.

To Selden W. Knowles, of Middletown, Ct., for improvement in Swinging Cradles.

I claim the combination of a cradle with pendulum rods and balls, or weights, attached thereto, and set in a frame so as to swing therein in the manner and for the purpose set forth.

To D. L. Latowrette, of St. Louis, Mo., for improvement in Oil Presses.

I claim the combination of the heating plates with the steam chamber, substantially as set forth, the plates being moved parallel, and the steam tubes connecting them with the steam chamber, sliding in stuffing boxes, in a line with the motion of the plates, as above set forth, said steam chamber being placed in a proper relative position with the plates for that purpose.

To Frederick Mathushek, of New York, N. Y., for improvement in Pianofortes.

I claim the manner, substantially as described, of placing or arranging the strings of pianofortes, to wit, the shorter strings, or strings of the higher octaves across the narrow portion of the instrument, and the longer strings, or those of the lower octaves, crossing them in the direction of the greatest length of the instrument, so as to include the greatest possible size of string within the instrument, for the purposes specified.

To W. H. Pease, of Dayton, O., for improvement in the method of Moulding Kettles with Spouts.

I do not claim any peculiarity either in dividing the pattern, or using a green sand core; but I claim providing the pattern, B, with two projections, or solid pieces, one, on the under side of the spout portion, to prevent sand entering the spout, when forming the green core of the body; and the other on the upper side of the spout for forming a print in the sand to receive the projection of a dry sand core, by the use of which, in connection, the said dry sand spout core can be inserted in the drag portion of the mould, after the removal of B, but before the removal of A, and be held firmly in its required position, by which means the pattern, A, is made to adjust the spout core, and greater truth secured in setting the spout core, and fewer defective casts result, in the manner set forth.

To Joel Stevens & H. J. Ruggles of West Poultney, Vt., for improvement in Dairy Stoves.

We claim the arrangement of the flues and valves, in combination with a water pan and fire, substantially in the manner and for the purpose set forth.

We also claim the combination of flues and valves, for the purpose specifically as described.

To T. B. Stout & J. F. Morell, of Keyport, N. J., for improvement in machines for taking Yeas and Nays.

We claim the method of dividing the yea and nay votes and showing the vote, by weighing the yea and nay balls, or their equivalents, in the opposite pans of a scale beam, substantially as set forth.

We also claim the method of enumerating the votes upon a question, by weighing the balls, or their equivalents, by spring balances, or their equivalents, whose indexes indicate the number of ballots in their respective scale pans, substantially as set forth.

We also claim the combination of the scale beam and spring balances, or the equivalent thereof, arranged substantially as described, for the purpose of showing, simultaneously, both the number of votes taken on each side of the question, and the relative values of the two sets or classes of votes, as set forth.

We also claim the employment of mechanism, for the purpose of recording the vote and showing whether it is yea or nay, at a single operation, substantially as described.

We also claim the employment of mechanism for the purpose of recording the vote and showing the enumeration thereof, at a single operation, substantially as described.

And lastly, we claim the employment of mechanism for the purpose of recording and enumerating the vote, and showing whether it is yea or nay, at a single operation, substantially as described.

To Jacob Stephan, (assignor to P. A. Schwartz & J. Stephan), of Boston, Mass., for improvement in Cements for Grinding Cylinders.

I claim the composition described consisting of the whey of milk, vinegar, glue, spirits of wine, and ether, substantially in the manner and for the purpose set forth.

I also claim the combination thereof, with emery, to construct a grinding cylinder, or other surface, in the manner described.

To R. S. Weaver, of Maysville, Ky., for improvement in machines for Printing in Colors.

I claim, in combination with receiving, distribuing, and inking rollers, arranged as described, the adjustable ink trough, provided with removable partitions and perforated side, so as to give out the ink in lines or belts, corresponding with the lines or size of the type in the form, for the purpose described.

To H. W. Adams, of Boston, Mass., for improvement in the use of steam to make Zinc White.

I claim mixing the vapor or gases of water or steam, with the heated vapor of zinc or of its ores, as set forth, for the purpose of manufacturing zinc white for commercial uses.

I also claim, in combination with the process for manufacturing zinc white, substantially as described, the making of hydrogen gas for light, heat, or motive power, as set forth.

To Euclid Rice, of Elizabethtown, N, J., for improvement in Baby Jumpers.

I claim the combining of springs with a frame and seat, in the manner described, forming an apparatus for teaching children to stand and walk, and, at the same time, to prevent the child from bearing its whole weight upon its feet, as it sits upon the seat or saddle, and can, at its option, either stand upon its feet or sit down, and at the same time move itself in any direction with its feet, and its body securely sustained in an upright position, after the upper top is locked around its waist, in the manner described: and it can, at its option, either move by a motion of its limbs, or use the machine as a jumper for amusement, as represented.

To S. W. Wood, of Rochester, N. Y., for improvement in Apparatus for Watering Cattle.

I claim, in combination with a pump, worked by an endless chain of elastic balls, and operated upon by the weight of cattle, the spiral spring operating between a stationary collar and the movable cogged and threaded sleeve, for the purpose of more certainly running the sleeve into gear, when the cattle step upon the platform, and for gradualling stopping the platform as it rises, and the buckets as they run back into the stock or pipe, for the purpose of carrying back the water, as described.

To Cyrus Roberts & John Cox, of Belleville, Ill., for improvement in Threshing and Separating Grain.

First, we claim the method described, of constructing threshing cylinders with curved knives, or otherwised shaped, in the end, for the purposes described.

Second, also the method already described of working the separator by means of the jumping wheels and concave tracked brackets, or by any modification of it, whereby the action is substantially the same.

DESIGN.

To Ezra Ripley,, of Troy, N. Y., (assignor to Chollar, Sage, & Dunham, of West Troy, N. Y., for Design for Stoves.

American Clippers---Cotton Sails.

McMakin's Model Courier has an excellent article on this subject, in which it attributes the most prominent advantages possessed by our clippers (and the yacht America) over others to the *use* of *cotton canvas*. It says :—

We hear it stated, that at the recent Royal yacht race at Cowes, the English yachts, to increase their speed with the America, had recourse to wetting their sails. Should Captain De Blaquire, the present owner of the America, adopt the hemp duck, as used by all the British Yacht Squadron, and have her sails cut on the old fashioned balloon principle, there is fear that the laurels she so gallantly won might soon wither in a contest with the Titania, in a suit of cotton sails made properly. The English method of cutting fore and aft sails differs materially from ours. For instance, they give the foot of their sails a greater circular sweep, which hangs below the foot-rope. The leeches are exceedingly hollow, caused by the stretching of the bolt-ropes, thereby sustaining an extra extent of spar. The America's sails, like all cut here, are straight in leech and foot.

The cotton canvas has now almost entirely superseded all other duck. It was invented by Mr. James Maull, of this city, and first manufactured for him by Mr. John Simpson, then residing at Wilmington, Delaware, during the late war with England, at which time, Russian, or any foreign canvas, it is well known to those in the trade, was selling at forty-five to fifty dollars per bolt.

The canvas was at first made by the hand-loom, which rendered it exceedingly soft and pliable; this was obviated by Mr. John C. Colt, of New York, who some thirty years since commenced its manufacture with the power-loom. Mr. Colt, and Messrs. Craig and Sergeant, were well aware of the difficulty Mr. Maull experienced in securing its introduction, and it was several years before it was at all noticed by other sail-makers, with the exception of Lambert Tree, who subsequently brought it into notice among our smaller vessels. Among the first who used the cotton canvas, was Capt. Parker, for the sloop Trial, of Trenton, and Capt. Stokes, now of the sloop Planter, of Wilmington.—After a few years' wear, Captains Stokes and Parker both became dissatisfied, particularly Captain Stokes, who stated that the disadvantages were that the cotton canvas was liable to continual ripping and expense of re-sewing; and notwithstanding its advantages in other respects, would renounce its use, if there was no method of obviating this defect —which was eventually a general objection. After some reflection, Mr. Maull, suggested to Messrs. Craig and Sergeant—the then agents of Mr. Colt—the adoption of cotton twine as a ready means to remedy the objection, impressing on them the ill effects of hempen twine. They induced Mr. Colt, on these representations, to make the cotton twine for the first time. It was made, and used with the most complete success, not only for cotton canvas, but for Russian duck—its efficiency consisting in its superior durability. It was then considered as an innovation, and condemned by many as visionary. Its present and general adoption in the United States is the best commentary on the success of Mr. Maull's efforts.

Mr. Maull early imbibed the impression that a vessel sailing against the wind would sail faster if her sails were constructed upon the principle of his Patent Horizontal system wherein the least resistance to the action of the wind is practically obtained—the seams being horizontal, or in the line of direction of the wind.

The celebrated Yacht Maria, owned by John C. Stevens, Esq., of New York, has been provided with these sails, and, although nearly four years in use, they are admitted to be the best fitting sails in New York. Her contest with the world-renowned "America," the victress of Johnny Bull, has settled her superiority even over that famous Yacht, a fact admitted by Mr. Schuyler and other members of the Yacht Squadron. Mr. Stevens has stated that he was under the impression, ten years before Mr. Maull obtained his patent, that the principle was the best method of cutting sails, and he was the first to introduce them in New York on the "Maria." His other schooner, the Uncle John, of one hundred and fifty tons, has been provided with the Patent Sails, which have been in constant use four years, and from a statement of Captain Baldwin, who commands her, we have learned that they have not been repaired, with the exception of roping, and that he expects they will last two or three years longer."

[On page 20, Vol 4, of the Scientific American, will be found a defence of the claims of Mr. Maull, as the inventor of cotton duck for sails, and "the horizontal sail."

A New Cotton Plant.

The editor of the New Orleans Orleanian has seen a boll of cotton which deserves the attention of cultivators, on account of its growth and early maturity. On the first of June last a lady planted in her garden a few cotton seeds presented her by a gentleman. On the 25th of July a boll was ready for picking; and at the end of sixty days from the time of planting the cotton had arrived at maturity; being in less than one half of the time it takes the species now raised by our planters to do so. The lady was totally unacquainted with the cultivation of the great Southern staple. The seeds were introduced by Mr. Hayams, from Youcatan, and are styled the Alica.

Oil from Popies.

In Switzerland, large fields of the poppy are cultivated, not for the purpose of making opium but oil. From the poppy a beautiful transparent oil is made, which is extensively used in house-painting. It is almost as colorless as water, and possesses so many advantages over the flax seed oil that it may ultimately supersede that article.—Where flax cannot be grown poppies can be in poor sandy soil. Linseed oil is becoming dearer, and the demand for paint is increasing. With white lead, poppy leaves a beautiful surface, which does not afterwards change, by the action of light, into a dirty yellow.

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TO CORRESPONDENTS.

N. S., and A. C., of R. I.—We have received your draft of a water wheel; it presents to us many defects of principle, which have before been tried and laid aside; it will not give a good percentage of power in comparison with the common turbine.

G. W. D., of N. Y.—The press, as you say, by coupling two, can print an endless sheet, but a revolving form on an endless apron, has nearly to describe a rectangle, and it never could run fast, it would be subject to great friction and breakage. The rotary press is the fastest, and a reciprocating press the next best motion. The plan of pipes for the carbonic acid could not be patented.

R. A. S., of Louisville—It is probable that your former agents have a power of attorney to transact the business with the department, and unless that is surrendered, and one given to us, it would be of no use for us to waste time and money in attempts to secure a hearing; some move must be effected in this respect before we can proceed unembarrassed.

C. W., of Tenn.—We have never seen a parallel motion exactly like yours, it is a mathematical problem of great beauty. The great object in engines, however, has been to get rid of bell cranks and joints to produce the common parallel motion.

J. C. P., of La.—We shall endeavor to profit by your hints.

E. B., of N. Y.—We are much obliged to you for your very beautiful problem.

W. B., of Ind.—We can send you a copy of the American Miller for $1,50. We do not know the exact price, but think this amount will cover the price and postage. $4 received.

A. U. S., of Pa.—No new work has been issued of late upon millwrighting, such a one at least as you would like. Evan's work is too old.

J. K. J., of Pa.—It should have been $7,50 instead of $15 which we acknowledged. The double spiral conical spring is well known; it is employed extensively in spring matresses, several of which were on exhibition at the Fair. No patent was ever obtained and could not be.

M. McD., of Va.—We have a drawing in our possession representing a potato-digger essentially similar to yours: we should think it patentable, and in case you should apply, you have only to establish your right to the invention, and a patent would, we think, be issued.

A. N. N., of Md.—Dr. Maynard, we believe, resides in Washington, D. C.

B. D. S., of Va.—We do not see how a patentable claim can be based upon your air-tight box; it is only the application of a contrivance well known, to produce a new result, and we advise you not to apply: $4 received, and much obliged.

J. M. P., of S. C.—We are not well acquainted with dealers here, but believe Messrs. Phelps & Kingman sell considerable furniture in your section; perhaps you could arrange with them or W. S. Humphreys, 197 Chatham street: you might write them in regard to the mater.

J. P. H., of N. H.—Your suggestions were regarded, and the caveat forwarded to the Patent Office last Friday.

D. E. McD., of N. Y.—The interlineation made by you was quite proper and should have been made by us. For receipt of your fees see proper column.

A. & W. B., of N. Y—We have no blank deeds on hand, but can get you any quantity printed should you require them. You are required to furnish a new model.

E. W., of O.—Your papers were forwarded to Washington as you directed; the address of your paper has now been changed as you requested.

H. J. A., of Ct.—We have not a copy of the Spinner to send you. We should like to receive the subscriptions you mention as having been procured for us, but we cannot offer other inducement, than those published weekly in our prospectus.

W. O. H., of Pa.—We will send you one of the mortising machines on the receipt of $20. You need not trouble yourself to send those odd numbers of the Scientific American which you refer to; they would be of no use to us.

J. M. B., of N. Y.—The paste of caoutchouc is made by dissolving india rubber in naptha (coal oil); turpentine will do as well; we have never tried the marine glue for belts.

J. P. L., of Selma—In the numbers of the Scientific American sent, you will find our opinion of the Annihilator fully stated.

E. W., of N. Y.—As we have not a single number of Vol. 3 on hand, the numbers you propose to send will be of no use to us. We have complete files of Volume 5; $6 received.

Money received on account of Patent Office business for the week ending November 1.

J. P. S. & Co., of Ct., $25; T. E. S., of Pa., $30; D. H. T., of Vt.; $10; T. S. B., of Phila., $20; A & W. B., of N. Y., $20; W.H. H., of N. J., $20; D. E. McD., of N. Y., $20; H. H.. of Ct. $30; A. D. B., of Ga., $50; J. W. M., of Vt., $28; B. & Co., of N. Y., $55.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Nov. 1:—

J. C. S., of N. Y.; G. H. D., of Mass.; C. H., of Pa.; L. C., of Ct.; T. S. B., of Phila.; L. K., of N. Y.; T. E. S., of Pa.; A. & W. B., of N. Y.; D. E. McD., of N. Y.; J. P. H., of N. H.

An Important Paragraph.

To preclude our subscribing friends the necessity of writing for the back numbers of the Scientific American, we shall forward to all new subscribers the back numbers of Volume 7, dating their subscriptions from the commencement unless they instruct to the contrary when they remit. We shall pursue this course of sending the back numbers issued on this Volume until No. 13, and after that time the names will be entered from the date of the reception or orders, unless the writer expresses a wish to receive the back numbers—in that case they will be promptly forwarded.

Those desiring Volumes 5 and 6 of the Scientific American are informed that we are able to furnish a few complete volumes (bound) at $2,75 each. Also, we can send by mail sets complete, minus No. 1, Vol. 5, for $2 each, Volume 6 being fully complete. We would also say, that whenever our friends order numbers they have missed—we shall always send them if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying when the numbers called for cannot be supplied.

On Sending Receipts.

It is not generally understood that it is in strict violation of the Post Office Laws of this country to enclose in the paper a receipt for money on account of subscription: such being one of the restrictions with which publishers have to contend under our present odious Postal Laws, we hope our patrons will excuse us for not granting their request to send receipts in defiance of law, but consider their money has come to hand providing the paper comes to them regularly: our custom being never to continue the paper after the time for which it was prepaid has expired.

Back Numbers and Volumes.

In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

Of Volumes 1, 2 and 3—none.

Of Volume 4, about 20 Nos.; price 50 cts.

Of Volume 5, all, price, in sheets, $2; bound, $2,75.

Of Volume 6, all: price in sheets, $2; bound, $2,75.

Postage on Books.

Subscribers ordering books or pamphlets through us are particularly requested to remit sufficient to pay postage, or we cannot attend to their orders. We are obliged to pay from 10 to 50 cents every time a pamphlet or book is sent by us through the post, and the justice of our demand is made apparent.

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American and Foreign Patent Agency

IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

VALUABLE WATER POWER and Machinery for sale in Virginia.—This property is situated on the Rivanna River and Virginia Central Railroad, within one and a half miles of the town of Charlottesville, and known as the "Charlottsville Factory." The river is navigable from Richmond to the spot. The property consists of an abundant water power, about 13 acres of land, a cotton and woollen factory, containing 552 spindles and 12 looms, with the usual accompaniment of machinery, wool cards, jack, &c., grist, plaster, and saw mills, iron foundry, brick store-house, and dwellings for some ten or a dozen families; also a variety of carpenters', machinists', and blacksmiths' tools, comprising cutting engine, lathes, screw tools, &c. The entire property will be sold at public auction on Thursday, Dec. 2nd next, on very accommodating terms. For further information address J. W. Saunders, J. A. Marchant, or the undersigned, Charlottesville, Va.,
8 3* HENRY W. JONES.

MALLEABLE IRON FOUNDRY, EASTON, Mass.—The subscriber continues to manufacture castings of every variety, for machinery and other purposes, of the best quality, at the above establishment, we have facilities for making castings 5 1-2 feet in length. Persons wishing castings can send patterns to Easton Express, Boston, Mass. All letters will be promptly attended to.
8 10* DANIEL BELCHER.

CLINTON FOUNDRY and MACHINE SHOP, Nos. 502 and 504 Water street, and Nos. 239 and 241 Cherry street, for sale. The Fountry is in the best working order; cupola sufficient to cast a piece of three tuns; a powerful crane, iron and wooden flasks, two core ovens, &c., in complete order for loam or green sand work. The machine shop is supplied with lathes and tools complete for all kinds of work; also a pattern and blacksmith shop attached, with the good will of a lease for nine years from May next. Will be sold separately or together; for further particulars apply to HECKER & BROTHER, Assignees of H. Waterman, 203 Cherry street. E. T. REANEY, Agent for Assignees. N. B.—A taut Oil Press for sale at a bargain, as above. 1*

LIST OF PRICES of Universal Screw Chucks, manufactured and for sale by O. L. REYNOLDS, Dover, N. H.:—4 inch. diameter, $12 6 inches, $18; 9 inches, $25; 12 inches, $30: 15 inches, $35; 18 inches, $40. 7 4*

TRAUTWINE ON RAILROAD CURVES.—By John C. Trautwine, Civil Engineer, Philadelphia; just published and for sale by WM HAMILTON, Actuary of the Franklin Institute Price $1.

"This is a really good work, and we heartily recommend it to our civil engineers."—[Scientific Am.

"We have carefully examined this work, and regard it as the best that has yet appeared on the subject," &c.—[Am. Railroad Jour. 8 10*

PATENT FELLY MACHINE.—This machine, for cutting fellys for wheels, is superior to anything of the kind for that object; with it, cutters are used instead of saws, and are easily adjusted to produce any required circle, in common use, leaving them perfectly smooth, thereby making a great saving of expense in dressing them for use. This machine was patented in 1850. For machines, or county and State rights, address JOSEPH ADAMS & SON, Amherst, Mass.; J. B. Wynne, Agent for the State of S. C. P. S.—Agents wanted to travel in Southern and Western States, to sell rights for the above machine. Good references will be required. 6 4

POST'S PATENT SLIDING DOOR FRONTS—For Stores and Public Buildings; a new, cheap, and simple fixture for securing store fronts, which renders them fire and burglar proof, has been invented and patented by the subscriber, who is now prepared to sell rights. Messrs. Quarterman & Son, 114 John st., N. Y., are general agents. Address (post paid) Wm. POST, Architect, Flushing, L. I. 6 3m

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TILTON's Patent Violin.—The undersigned having patented his Violin Improvement, is prepared to exhibit it to the public. Being now in New York, he may be found at No. 18 Park Place (Mr. J. Wiley's), where he will be pleased to see such gentlemen as take an interest in his invention. All communications addressed "Wm. B. Tilton & Co.," as above, or at Carrolton, Pickens Co., Ala.
3 12* WM. B. TILTON.

LEROW & BLODGETT'S PATENT ROTARY SEWING MACHINE.—The undersigned, having purchased the right to use, sell, and manufacture these machines for the States of Alabama and Mississippi, and their other business engagements preventing them from giving it their personal attention, they are disposed to sell out their right to the above-mentioned States, or counties in them, if preferred, upon favorable terms. To an energetic and industrious man we will sell upon such terms as will insure a large and handsome profit. Apply to Mr. W. SCRUGGS, of the firm of Messrs. Scruggs, Drake & Co., Charleston, S. C., or to WM. MAILLER, Decatur, Ala. 4 8*

PROFESSOR ALEX. C. BARRY'S TRICOPHEROUS OR MEDICATED COMPOUND.—Professor Barry does not hesitate to put his Tricopherous, for the two grand requisites of efficacy and cheapness, against any preparation for cleansing, renewing, preserving, and strengthening the Hair, that has ever been advertised or offered for sale. He challenges the associated skill and science of the medical world to produce, at any price, an embrocation that will reduce external irritation, cure ordinary cutaneous diseases and severe cuts, sprains, pains, &c. Price 25 cents per bottle. To be obtained, wholesale or retail of Mr. A. C. BARRY, 137 Broadway. 4 3m*

CLOCKS FOR CHURCHES, PUBLIC BUILDINGS, RAILROAD STATIONS, &c., and REGULATORS FOR JEWELLERS.—The undersigned having succeeded in counteracting effectually the influence of the changes of the temperature upon the pendulum, and introduced other important improvements in the construction of clocks, 2re prepared to furnish an article, superior in every respect (the highest grade warranted to vary less than two minutes in a year) to any made in the United States. Complete opportunity will be afforded to test their qualities. Glass (illuminated) dials of the most beautiful description furnished. Address SHERRY & BYRAM, Oakland Works, Sag Harbor, Long Island, N. Y.

"At the Oakland Works of Sherry & Byram there are made some of the finest clocks in the world."—[Scientific American.

"Mr. Byram is a rare mechanical genius."—[Jour. of Commerce. 5tf.

A CARD.—The undersigned begs leave to draw the attention of architects, engineers, machinists, opticians, watchmakers, jewellers and manufactures of all kinds of instruments, to his new and extensive assortment of fine English (Stubs) and Swiss Files and Tools; also his imported and own manufactured Mathematical Drawing Instruments of Swiss and English style—which he offers at very reasonable prices. Orders for any kind of instruments will be promptly executed by F. A. SIBENMANN Importer of Watchmakers' and Jewellers' Files and Tools and manufacturer of Mathematical Instruments 154 Fulton st. 6 9*

WATTS & BELCHER, Manufacturers of Steam Engines, Lathes, Planing Machines, Power Presses, and Mechanics' Tools of all descriptions. Orders respectfully solicited and punctually attended to. Washington Factory, Newark, N. J. 7 2**

MACHINERY FOR SALE—Four dead spindle filling frames, 1-16 strand speeder, 1 warper, 1 lapper, &c. Also turbine water wheels, 6 ft. diameter, of most approved patterns, at $275 each; a breast wheel, &c.; 20 feet long, and an iron under-shot water-wheel. ELI WHITNEY.
New Haven, Oct. 22, 1851. 7 6*

PATENT CAR AXLE LATHE—I am now manufacturing, and have for sale, the above lathes; weight, 5,500 pounds, price $600. I will furnish a man with each lathe, who will turn and finish axles for 50 cents each, if desired. I have also for sale my patent engine screw lathe, for turning and chucking tapers, cutting screws and all kinds of common job work, weight 1500 lbs., price $225. The above lathe warranted to give good satisfaction. J. D. WHITE, Hartford, Ct. 7 6m*

BROOM MACHINERY.—The most improved and durable machinery for the manufacture of Brooms, for sale by JACOB GRAY, Scotia, Schenectady Co., N. Y. Address post-paid. 4 8*

IRON FOUNDERS MATERIALS—viz.: fine ground and Bolted Sea Coal; Charcoal, Lehigh, Soapstone and Black Lead Facing. Iron and brass moulding sand; Fire Clay, Fire sand and Kaolin;—also English, Scotch and Welsh Fire Bricks—plain arch, circular and tower cupola—for sale by G. O. ROBERTSON Liberty place, between 57 and 59 Liberty-st. (near the Post Office) N. Y. 7 12*

GREGORY'S PATENT EQUALIZER, for Engines using steam expansively.—This invention largely economizes fuel, and may be attached, at a trifling cost, to any engine now working, high or low pressure, on land or water, City, County, and State Rights for sale. Terms and particulars may be had, by letter, or on personal application to T. B. ROBERTSON, Agent, 120 Water st., N. Y. N. B.—A liberal commission allowed. 7 4*

SCRANTON & PARSHLEY, Tool Builders, New Haven, Conn., have on hand six 12 ft. slide lathes, 28 in. swing; also four 8 ft. do.; 21 in. swing, with back and screw gearing, with all the fixtures; one 5 ft. power planer; 12 drill presses, 4 bolt cutting machines, 30 small slide rests; 5 back geared hand lathes, 21 in. swing; 15 do. not geared; 8 do. 17 in. swing on shears 5 1-2 feet; 25 ditto with and without shears, 13 in. swing; counter shafts, all hung if wanted suitable to the lathes. Scroll chucks on hand; also index plates for gear cutting. Cuts of the above can be had by addressing as above, post-paid. 47tf

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BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 5tf

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TO PAINTERS AND OTHERS.—American Atomic Drier, Electro Chemical graining colors, Electro Negative gold size, and Chemical Oil stove Polish. The Drier improves in quality by age—is adapted to all kinds of paints and also to Printers' inks and colors. The above articles are compounded upon known chemical laws and are submitted to the public without further comment.—Manufactured and sold wholesale and retail at 114 John st. N. Y. and Flushing L. I. N. Y.; by
QUARTERMAN & SON
48tf Painters and Chemists.

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 1tf

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LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers—from 1 1-4 to 7 inches in diameter. The only Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany—for Locomotive Marine and other steam Engine Boilers.
THOS. PROSSER & SON, Patentees,
1tf 28 Platt-st. N. Y.

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post paid) MUNN & CO.—
At this Office.

KELLY & CO., New Brunswick, N. J., Foundry and Machine shop, manufacturers of stationary Engines, India Rubber Machinery, Mill Gearing, and stove castings &c. Articles made in the machinery line to order with dispatch and in the most workmanlike manner. Parties wanting machinery or castings made will be waited on within any reasonable distance. Orders solicited. 47 12*

WOOD'S IMPROVED SHINGLE MACHINE—Patented January 8th 1850, is without doubt the most valuable improvement ever made in this branch of labor-saving machinery. It has been thoroughly tested upon all kinds of timber and so great was the favor with which this machine was held at the last Fair of the American Institute that an unbought premium was awarded to it in preference to any other on exhibition. Persons wishing for rights can address (post-paid) JAMES D. JOHNSON, Easton Conn.; or WM. WOOD, Westport; Ct. All letters will be promptly attended to. 37tf

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LEONARD'S MACHINERY DEPOT, 109 Pearl-st. 60 Beaver N. Y.—The subscriber is constantly receiving and offers for sale a great variety of articles connected with the mechanical and manufacturing interest, viz.: Machinists' Tools—engines and hand lathes; iron planing and vertical drilling machines; cutting engines, slotting machines; bolt cutters; slide rests; universal chucks &c. Carpenters' Tools—mortising and tennoning machines; wood planing machines &c. Steam Engines and Boilers from 5 to 100 horse power. Mill Gearing—wrought iron shafting; brass and iron castings made to order. Cotton and Woolen machinery furnished from the best makers. Cotton Gins; hand and power presses. Leather Banding of all widths made in a superior manner; manufacturers' Findings of every description. P. A. LEONARD. 48tf

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MANUFACTURE OF PATENT WIRE Ropes and Cables—for inclined planes, suspension bridges, standing rigging, mines, cranes, derick, tillers &c.; by JOHN A. ROEBLING; Civil Engineer—Trenton N. J. 47 1y*

RAILROAD CAR MANUFACTORY—TRACY & FALES, Grove Works, Hartford, Conn. Passage, Freight and all other descriptions of railroad Cars, as well as Locomotive Tenders, made to order promptly. The above is the largest Car Factory in the Union. In quality of material and in workmanship, beauty, and good taste, as well as strength and durability, we are determined our work shall not be surpassed. JOHN R. TRACY,
39tf. THOMAS J. FALES.

BEST CAST STEEL AXLES AND TYRES, (a new article,) for Railroad Carriages and Locomotives. The quality of this steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the engineers of the United States, either by impact or by torsion. This steel is manufactured by Fried Krupp, Esq., of Essen, in Rhenish Prussia, represented in the United States by THOS. PROSSER & SON, 28 Platt st., N. Y.
2tf.

TO ENGINEERS.—A new Work on the Marine Boilers of the United States, prepared from authentic Drawings and Illustrated by 70 Engravings—among which are those of the fastest and best steamers in the country—has just been published by B. H. BARTOL, Engineer, and is for sale at the stor of D. APPLETON & CO.,
1 12* 200 Broadway.

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SCIENTIFIC MUSEUM.

For the Scientific American.

Horse-Shoeing---Interfering Horses.

One writer in the Scientific American recommends raising the shoe upon the inside, and another the reverse; which is correct? I answer—both; and I also say both are in error. The lateral motion of the fetterlock joint is small, and the effort to throw the ancle out by the method recommended by Mr. Jewett usually produces inflammation of the cartilages and ligaments of the joint, and many times destroys the socket by absorption of the heads of the bone, leaving the ancle permanently enlarged, and ruining the horse for road or market. The paring off the hoof from the inside will have the same effect, if it is carried to an extent, to put the shoe farther under the foot than it ought to be.

Many horses in ill condition will interfere in spite of all remedies, when jaded or allowed to shack upon the road. The best remedies are the good condition of the horse—skillful shoeing, *i. e.*, neither inclining one way nor the other, but made to resemble the fair hoof of the horse as near as may be, being as light as possible. And instead of shoeing so as to have the shoe standing like a three-legged stool, allow all the shoe to touch the ground, by having a flange turned upon the whole outer edge of the shoe. The best horse-shoe ever brought into use, is one recently invented by Mr. Wm. A. Sweet, of Pompey, N. Y.; it is made of good spring steel, smooth inside, with a flange turned on the outer edge; it will soon come into general use. In applying the shoe to cure the interfering foot, the clinches should be kept close, and the nails set well into the groove; the improved shoe protects the nails by its flange. The unnatural shoeing will accomplish all that can be expected, in a few days, but the result of such practice is too often injurious to admit of its general use. Your last correspondent requires no reply. S. A.

Syracuse, N. Y.

Machinery Manufactured in Alabama.

The establishment of the Montgomery manufacturing Co., says the "Advertiser," under the control and management of Messrs. Gindrat & Co., is now not only the largest of the kind in the South, but is turning out machinery, the style, beauty of finish, and strength of which, are second to none.

In taking a stroll through their extensive shops a few days since, we were shown by Mr. J. S. Winter, (one of the proprietors of the establishment) an engine, the appearance of which we will not attempt to describe—but merely affirm that it was—although yet unfinished, the handsomest piece of machinery we ever saw. We never knew before that iron could be brought to so fine a polish. It will well pay any one for the trouble to go and examine it. The engine, which is of thirty horse power, is to be sent to the Fair in Georgia. It is appropiately named the "Alpha," and if we mistake not, will receive the first premium.

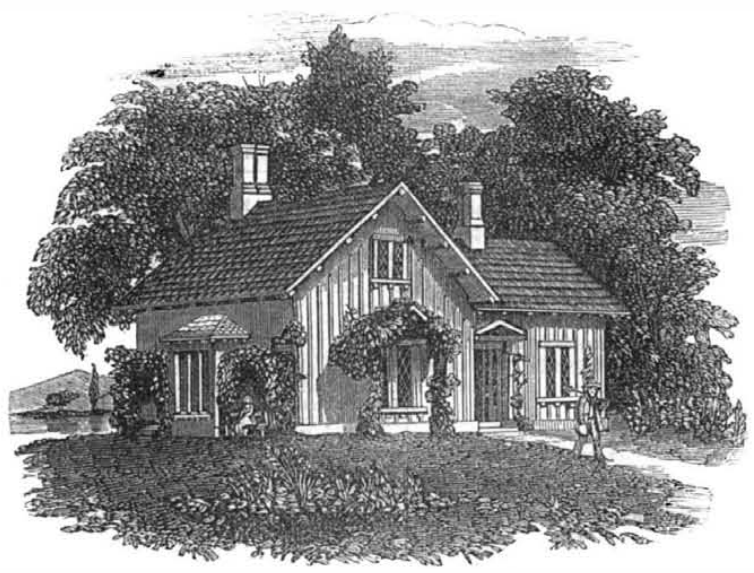
This establishment commenced the construction of steam engines about 18 months since, and have turned out over eighty since that time. Such establishments as this among us do away with the necessity of sending to Northern markets for machinery.

Poison of the Toad.—It is an ancient and still common opinion that the toad possesses a subtle venom, but at present this is deemed fabulous by the scientific. MM. Gratiolet and Cloez, as appears by the reports of the Academy of Sciences, have shown by experiment that they secrete a deadly poison. They inocculated small birds with the milky fluid contained in the dorsal and parotid pustules of this animal, and found that they died at the end of five or six minutes. Even when dried the fluid destroyed birds. Death occurred without convulsions, and all exhibited marked signs of apoplexy.

Three-Decked Man-of-War Steamers.—An interesting experiment is in preparation at the seaport of Toulon. The French Government has ordered an engine of 400 horse power to be put into the man-of-war Napoleon, of one hundred guns. It is calculated that this machine will propel the vessel at the speed of eight miles an hour. The attempt is looked upon with considerable interest in France and England. If successful it will be imitated in other ships.

Diving Vessels.—Mr. Cave, the owner and manager of one of the first iron workshops in Paris, is now buiding two large boats to be used under water in the work of clearing away the bar at the mouth of the Nile. They are on the new plan, and better than anything of the kind we have heard of. In the middle of the deck is a large circular hole, going vertically through the ship, and in slides a cylinder reaching to the bottom of the river, which may be shortened or enlarged at will, like a telescope. Above the opening is a large air chamber 22 feet in diameter and 16 feet high. By forcing compressed air into the air chamber the water in the tube is driven out at the lower end, leaving dry a portion of the bed. An apparatus of the same kind, but on a reduced scale, is now in operation on the river Seine.

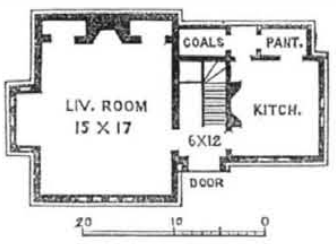
A CHEAP COTTAGE.---Fig. 1.



The accompanying engravings illustrate A Small Bracketted Cottage, taken from "Downing's Cottage Houses." Figure 1 is a perspective view, and figure 2 a plan view. It is designed with a regard to cheapness, and commends itself to many of our mechanics who would prefer to live in their own dwellings, as their own landlords, "happy and free."

The plan of the first floor of this cottage shows an entry, six by twelve feet, containing a flight of stairs to the chamber floor, under which are stairs to the cellar. On the left is the living-room of the family, fifteen by seventeen feet. The deep chimney-breast at the end of the room gives space for two large

Fig. 2.



closets. The bay-window measures six feet in the opening (in the clear), and is three feet deep.

On the right of the entry is the kitchen, a small room, ten by twelve feet. As the living room of the family will, in a great measure, be also the kitchen, this small kitchen will, in fact, be used as a back kitchen for the rough-work, washing, etc., so that in summer, and indeed at any time, the living-room can be made to have the comfortable aspect of a cottage parlor, by confining the rough work to the kitchen proper. Back of this kitchen is a small lean-to addition, containing a small pantry, four by six feet, and a place for coal. There is a small passage between this closet or pantry and the coal-hole, and opposite the door opening from the kitchen into this passage, is a door which serves as a back door to enter the kitchen without going in the front entrance. Planed-and-matched or rough boards may be used for the vertical weather-boarding; we should prefer to have them rough (if the cottage is filled in), and painted and sanded. In this we include a cellar under the kitchen and entry, but not under the living-room. The foundation walls of the latter should be laid three and a half feet below the level of the ground.

It is estimated that a cottage of this description, withing six miles of New York City, could be built for $600, but it could be built for $100 less in the country where lumber is cheap. At the present moment "lumber is lumber," as the old saying is; it is therefore no small expense to build houses at present. It is our opinion that cast-iron must supersede, in a great measure, the wooden houses now built, not only as a more desirable but a cheaper material.

Improved Candles.

Cist's Cincinnati Advertiser thus mentions a new species of candle recently produced in that city: "it is calculated to supersede all other kinds in use, by its beauty, freedom from guttering, hardness, and capacity of giving light, in all which respects it is superior to every other species of candle. This candle is nearly translucent, and can be made to exhibit the wick, when the candle is held up between the eye and the light, while the surface is as glossy as polished wax or varnish.

When I state that the principal ingredient is our great staple, lard, the value of this manufacture can hardly be exaggerated, and when I say explicitly that, taking durability into account, it can be made as cheap as any other candle, and that there exists no single element of comfort, convenience, profit and economy in which this article has not the advantage of sperm, star, wax, or tallow candles, it will be readily conceded that the days of all other portable or table light, including lard oil, are numbered. In fact, except where intense light, as in public buildings, is an object, gas itself cannot compete with it for public favor. I am not at liberty, in this stage of the enterprise, to be more explicit, but shall shortly publish further details. What I have already stated rests upon my personal knowledge and observation, and the statements of judgment and veracity."

[We hope the above is correct in every particular, for the candles now sold in our city for "good tallow," are miserable in the extreme; they melt away with a lard-like softness very fatal to the pockets of purchasers. The common sperm candles sold in our stores exhibit qualities of a near relationship to the lard tallow candle.

Steven's Siding and Flooring Machine.

We have heard so many favorable reports concerning the operation of this wonderful invention, that we concluded to witness its performance, which we did to our astonished satisfaction, on yesterday afternoon. It is a sawing machine, and was invented for the purpose of sawing out lumber for flooring and siding uses, which, by the way, it does with a most surprising dispatch and in a most superior manner. This machine runs thirty-two saws, and is capable of sawing as many boards, ten or twelve feet in length, in three minutes. It promises to meet with a most welcome adoption, wherever sawing and building is necessary. We understand that Mr. Stevens intends takiug one of his invaluable patents to the *Pinery*. It will be a profitable machine in that section of the country. He is going to increase the number of saws to seventy-five. We advise all who take an interest in a truly valuable invention, to give this machine a visit. Mr. Stevens will be pleased to gratify those who desire to witness its operation, if they will call at the United States Foundry, in the southern part of the city.—[St. Louis Reville.

[There may be some good improvement about this machine, not described, but if the invention consists merely in working gang-saws it is not new, for gang saws were employed in our country before the Revolution. We have never known so large a gang used as that by Mr. Stevens, but the larger the gang, the greater the power required to work them.

LITERARY NOTICES.

The Mind and the Heart.—Messrs. Adriance, Sherman & Co., No. 2 Astor House, have just issued a neat volume of 72 pages of poems, by Franklin W. Fisk, when in his eighteenth year. They would be no discredit to an older head—several of them are full of touching pathos.

Sketches and Statistics of Cincinnati in 1851: Wm. H. Moore & Co., publishers, 118 Main street, Cincinnati, pp. 363. We are indebted to Charles Cist, Esq., the author, and compiler, for a copy of this publication. It is arranged under 15 classifications, viz., Physical characteristics, Personal Statistics, Education, Science, and Literature, the Fine Arts, Monetary, Public Institutions, Manufactures, and Industrial Products, Transportation, Commerce, etc., together with miscellaneous information, the biography of eminent residents, and splendidly embellished with their portraits, executed in excellent style, besides views of some of the most prominent public buildings. Mr. Cist has done himself much credit in the production of this work, and we hope a discerning public will reward his efforts. In looking cursorily through this volume, and examining some of the statistics embraced in it, we are struck with the enterprize and greatness of Cincinnati.

Harper's Magazine for November contains a continuation of Mr. Abbott's illustrated series of the Life of Napoleon; it is rich in gems of literature. The present number closes the volume. Harper & Bros., New York.

The International, for November, Stringer & Townsend, is a beautiful number, well embellished, and ably supplied with the choicest reading.

Practical Model Calculator.—No. 3 of this work, edited by Oliver Byrne, and published by Henry Carey Baird, of Philadelphia, has just been received It contains articles on Cuttings and Embankments, Calculations on the Steam Engine, &c.

Magazines for November.—We are indebted to Messrs. Dewitt & Davenport, for Graham's and Sartain's Magazines. They are both excellent numbers.

We have received from Hon. Wm. H. Seward a pamphlet copy of his able argument in the Conspirator's Trial, at Detroit. It is neatly gotten up by Messrs. Derby & Miller, Auburn, N. Y.

TO MECHANICS, INVENTORS, AND MANUFACTURERS.

SEVENTH VOLUME OF THE

SCIENTIFIC AMERICAN.

MESSRS. MUNN & CO.,

AMERICAN & FOREIGN PATENT AGENTS,

And Publishers of the SCIENTIFIC AMERICAN, respectfully announce to the public that the first number of VOLUME SEVEN of this widely circulated and valuable journal was issued on the 20th of September in AN ENTIRE NEW DRESS, printed upon paper of a heavier texture than that used in the preceding volumes.

It is published weekly in Form for Binding, and affords, at the end of the year, a SPLENDID VOLUME of over FOUR HUNDRED PAGES, with a copious Index, and from FIVE to SIX THOUSAND *ORIGINAL ENGRAVINGS*, together with a vast amount of practical information concerning the progress of INVENTION and DISCOVERY throughout the world. There is no subject of importance to the Mechanic, Inventor, Manufacturer, and general reader, which is not treated in the most able manner—the Editors, Contributors, and Correspondents being men of the highest attainments. It is, in fact, the leading SCIENTIFIC JOURNAL in the country.

The Inventor will find in it a weekly *DIGEST* of *AMERICAN PATENTS*, reported from the Patent Office,—an original feature, not found in any other weekly publication.

Terms—$2 a-year; $1 for six months.

All Letters must be Post Paid and directed to

MUNN & CO.,

Publishers of the Scientific American,

128 Fulton street, New York.

INDUCEMENTS FOR CLUBBING.

Any person who will send us four subscribers for six months, at our regular rates, shall be entitled to one copy for the same length of time; or we will furnish—

Ten Copies for Six Months for	$ 8
Ten Copies for Twelve Months,	15
Fifteen Copies for Twelve Months,	22
Twenty Copies for Twelve Months,	28

Southern and Western Money taken at par for subscriptions, or Post Office Stamps taken at their full value.

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